

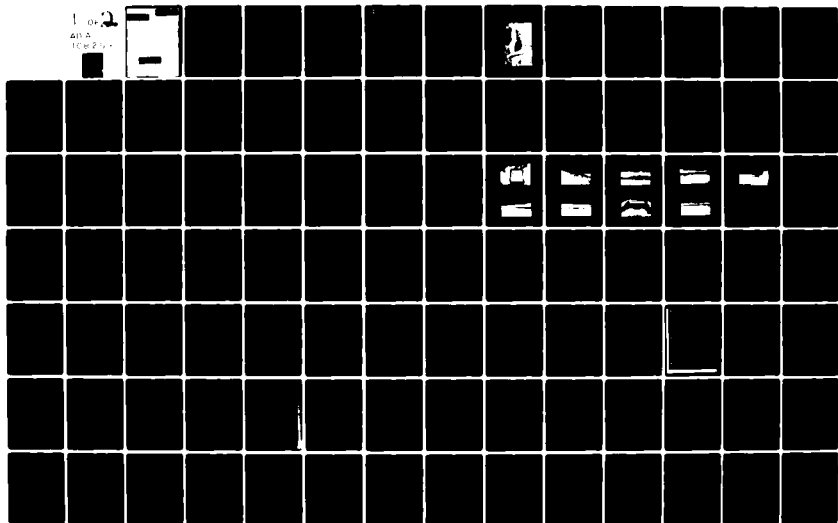
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NATIONAL PROGRAM OF INSPECTION OF NON-FEDERAL DAMS, TENNESSEE. --ETC(U)
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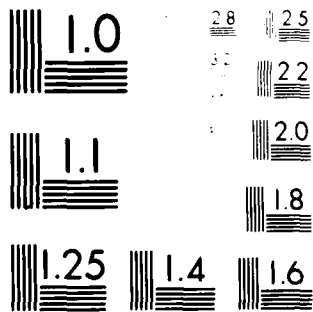
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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO. PD-A108259	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) National Program of Inspection of Non-Federal Dams Tennessee. Sweetwater Creek Watershed Dam No. 15 (Inventory Number TN 12314) near Sweetwater, TN, Monroe County, TN, Tennessee River Basin		5. TYPE OF REPORT & PERIOD COVERED Phase 1 Investigation Report
7. AUTHOR(s)		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS Tennessee Department of Conservation Division of Water Resources 4721 Trousdale Dr., Nashville, TN 37220		8. CONTRACT OR GRANT NUMBER(s) DACW-62-81-C-0056
11. CONTROLLING OFFICE NAME AND ADDRESS U.S. Army Engineer District, Nashville P.O. Box 1070 Nashville, TN 37202		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
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18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Dams Dam Safety National Dam Safety Program Sweetwater Creek Watershed Dam No. 15, TN Sweetwater, TN Monroe County, TN Embankments Visual Inspection Structural Analysis		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The Dam is located in Monroe County about 0.7 miles southwest of Sweetwater, Tennessee and is an earthfill embankment 46 feet high and 1100 feet long. The crest width is 19 feet. The embankment slopes are 1V:3H and berms are located on both the upstream and downstream slopes. The dam controls a 1005 acre drainage area and is intended to impound the 9.4 acre Sherman F. Owen Lake. The service spillway is a 2 stage standard SCS cast in place concrete riser leading leading to a 30-inch diameter reinforced concrete pipe. The service spillway outlet has an SCS standard baffled impact basin. The drawdown drain is a 24-		

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inch diameter orifice controlled by a slide gate at the base of the riser. The emergency spillway is an uncontrolled earth saddle on the left abutment. The channel has a trapezoidal cross-section with a 200 foot base and 1V:3H side slopes. The reservoir has a leak which has prevented filling of the lake and is apparently due to an open solution channel that is draining into another watershed. The leak is not expected to affect the structural stability of the dam. No indications of instability were observed. The Dam is in the intermediate size category and has a downstream hazard potential classification of high under Corps of Engineers criteria and 1 under State criteria. On the basis of hydraulic analysis, the dam has adequate storage/spillway capacity to pass the probable maximum flood (PMF) under antecedent moisture condition II (AMC II). Under OCE guidelines, a dam in the intermediate size and high hazard potential classification is required to pass the PMF.

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DEPARTMENT OF THE ARMY
NASHVILLE DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1070
NASHVILLE, TENNESSEE 37202

25 SEP 1981

IN REPLY REFER TO

ORNED-G

Honorable Lamar Alexander
Governor of Tennessee
Nashville, TN 37219

Dear Governor Alexander:

Furnished herewith is the Phase I Investigation Report on Sweetwater Creek Watershed Dam No. 15 near Sweetwater, Tennessee. The report was prepared under the authority and provisions of PL 92-367, the National Dam Inspection Act, dated 8 August 1972.

The report presents details of the field inspection, background information, technical analyses, findings, and recommendations for improving the condition of the dam.

Based upon the inspection and subsequent evaluation, this dam is classified as not deficient at this time. The dam is judged stable, with a good grass cover on the embankment. Only minor erosion exists on the upstream slope due to fluctuating water levels.

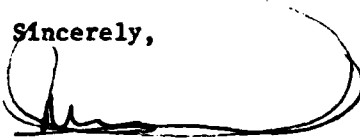
As required for a dam such as this in the intermediate size and high hazard category, this dam is capable of safely passing the full probable maximum flood.

The present maintenance program should be continued and protection against erosion of the upstream slope should be provided.

Public release of the report and initiation of public statements fall within your prerogative. However, under provisions of the Freedom of Information Act, the Corps of Engineers is required to respond fully to inquiries on information contained in the report and to make it accessible for review on request.

Your assistance in keeping me informed of any further developments will be appreciated.

Sincerely,


LEE W. TUCKER
Colonel, Corps of Engineers
Commander

1 Incl
As stated

CF:
Mr. Robert A. Hunt, Director
Division of Water Resources
4721 Trousdale Drive
Nashville, TN 37220

PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM

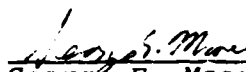
Name of Dam Sweetwater Creek
Watershed Dam #15

County Monroe

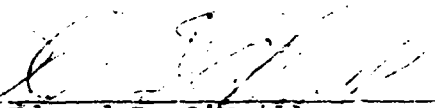
Stream Tributary of
Sweetwater Creek

Date of Inspection May 19, 1981


Prepared By:


George E. Moore
Regional Engineer

Approved By:


Edmond B. O'Neill
Chief Engineer
Safe Dams Section

Approved By:


Robert A. Hunt, P.E.
Director, Division of
Water Resources
Tennessee Department
of Conservation



OVERVIEW PHOTOGRAPH

PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM

Name of Dam Sweetwater Creek
Watershed Dam #15

County Monroe

Stream Tributary of
Sweetwater Creek

Date of Inspection May 19, 1981

ABSTRACT

Sweetwater Creek Dam #15 is located in Monroe County about 0.7 miles southwest of Sweetwater, Tennessee. The dam is an earthfill embankment 46 feet high and 1100 feet long. The crest width is 19 feet. The embankment slopes are 1V:3H and berms are located on both the upstream and downstream slopes. The dam controls a 1005 acre drainage area and is intended to impound the 9.4 acre Sherman F. Owen Lake. The service spillway is a 2 stage standard SCS cast in place concrete riser leading to a 30-inch diameter reinforced concrete pipe. The service spillway outlet has an SCS standard baffled impact basin. The drawdown drain is a 24-inch diameter orifice controlled by a slide gate at the base of the riser. The emergency spillway is an uncontrolled earth saddle on the left abutment. The channel has a trapezoidal cross-section with a 200 foot base and 1V:3H side slopes.

The reservoir has a leak which has prevented filling of the lake. The leak is apparently due to an open solution channel that is draining into another watershed. The leak is not expected to affect the structural stability of the dam. No indications of instability were observed.

Sweetwater Creek Dam #15 is in the intermediate size category and has a downstream hazard potential classification of high under Corps of Engineers criteria and 1 under State criteria.

On the basis of hydraulic analysis, the dam has adequate storage/spillway capacity to pass the probable maximum flood (PMF) under antecedent moisture condition II (AMC II). Under OCE guidelines, a dam in the intermediate size and high hazard potential classification is required to pass the PMF.

At this time, the dam is considered "not deficient". It is recommended that slope protection be provided on the upstream slope, an emergency action plan be developed, and a program of routine maintenance and periodic inspection be established.

TABLE OF CONTENTS

	<u>Page</u>
Aerial Photograph	
Abstract	
SECTION 1 - GENERAL	
1.1 Authority	1
1.2 Purpose and Scope	1
1.3 Past Inspections	1
1.4 Miscellaneous Details	1
1.5 Inspection Team Members	1
SECTION 2 - PROJECT DESCRIPTION	
2.1 Location	2
2.2 Description	2
SECTION 3 - INSPECTION FINDINGS	
3.1 Visual Inspection	5
3.2 Review of Data	6
3.3 Static and Seismic Stability Assessment	6
3.4 Hydraulic and Hydrologic Analysis	6
3.5 Conclusions and Recommendations	7
SECTION 4 - REVIEW BOARD FINDINGS	

LIST OF APPENDICES

APPENDIX

A	DATA SUMMARY
B	SKETCHES AND LOCATION MAPS
C	PHOTOGRAPHIC RECORD
D	HYDRAULIC AND HYDROLOGIC DATA
E	CHECKLIST AND DESIGN PLANS
F	CORRESPONDENCE

PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM

SECTION 1 - GENERAL

- 1.1 Authority - The Phase I inspection of this dam was carried out under the authority of Tennessee Code Annotated, Sections 70-2501 to 70-2530, The Safe Dams Act of 1973, and in cooperation with the U. S. Army Corps of Engineers under the authority of Public Law 92-367, The National Dam Inspection Act.
- 1.2 Purpose and Scope - The purpose of a Phase I investigation is to develop an engineering assessment of the general condition of a dam with respect to safety and stability. This is accomplished by conducting a visual inspection, reviewing any available design and construction data, and performing appropriate hydraulic, hydrologic, and other analyses. A comprehensive description of the Phase I investigation program is given in Recommended Guidelines for Safety Inspection of Dams, Department of the Army, Chief of Engineers, Washington, D. C. 20314.
- 1.3 Past Inspections - No previous inspections have been made by this office. Annual inspections are made by representatives of the watershed district and the SCS. A copy of their latest inspection report is included in Appendix
- 1.4 Miscellaneous Details - The day of the inspection was cloudy with light winds and an ambient temperature of about 65°F. Some rain fell during the inspection. The pool elevation was 945.1' msl, 40.3 feet below the effective crest of the dam.
- 1.5 Inspection Team Members - The inspection was conducted by the following State personnel:

Ed O'Neill, Chief Engineer
Troy Wedekind, Regional Engineer
George Moore, Regional Engineer

SECTION 2 - PROJECT DESCRIPTION

2.1 Location - The dam is located in Monroe County, Tennessee, about 0.2 miles northwest of U. S. Highway 11 and 0.7 miles southwest of the city of Sweetwater. It is situated on a tributary of Sweetwater Creek 0.3 miles from its confluence with Sweetwater Creek. The dam can be located on the USGS topographic quadrangle, Sweetwater, Tennessee (131SW), at 84°29'57" west longitude and 35°34'28" north latitude.

2.2 Description - (The following data was obtained from a review of SCS furnished documents. See Section 3.2 for further description.)

2.2.1 Embankment - The dam is a linearly aligned earthfill embankment with a maximum height of 46 feet and a length of 1100 feet. The crest width is 14 feet. The side slopes of the dam are 1V:3H. The upstream slope has a 35 foot berm 23.3 feet below the crest. A 30 foot berm is located on the downstream slope 19.1 feet below the crest. The dam is formed of a core of CH and MH materials (Unified Classification System) with a 5 foot blanket of SC material covering the entire embankment. The cutoff trench and the area around the pipe are filled with CL and SC materials.

The dam has a graded sand and gravel embankment drainage system. A chimney drain starts at elevation 975' msl, 25 feet downstream of the centerline of the dam. The chimney has a horizontal width of 10 feet and slopes downstream at 1V:2H to the natural ground line. A 10 foot wide trench drain extends from the natural ground line to the rock line. A blanket drain extends from the trench to the toe. The drain is graded to rock at the downstream toe.

The dam is located on the Newalla formation of the Ordovician Period. The Newalla formation is formed in unseparated areas of the Kingsport and Mascot formations. The formation is a soluble dolomite which weathers into clay with massive chert fragments. The area has numerous springs. Contact between formations in this area generally lies in a northeast to southwest orientation.

2.2.2 Service Spillway - The service spillway has a two stage cast in place covered concrete riser of standard SCS design. The low stage inlet is a 1.8' x 2.5' rectangular orifice on the upstream side of the riser with an invert elevation of 964.0' msl. The high stage inlets are 7.5' x 1.25' rectangular openings on either side of the riser at elevation 976.7' msl. The riser leads to a 30" ID AWWA Spec C-301 reinforced concrete pipe. The pipe has ten 11.33' x 7.75' concrete anti-seep collars on 16' centers. The outlet of the pipe leads to an SCS standard baffled impact basin. The maximum capacity of the service spillway is 124 cfs.

2.2.3 Drawdown Drain - The drawdown drain is a 24" diameter thimble orifice with a rectangular slide gate at the base of the riser. The invert elevation is 947.0' msl.

2.2.4 Emergency Spillway - The emergency spillway is an uncontrolled vegetated earth saddle on the left abutment. The spillway has a trapezoidal cross-section with a 200' base and 1V:3H side slopes. The control section is 30 feet long. The entrance slope is 2% and the exit slope is 3.5%. The maximum head is 7.9 feet. The maximum capacity of the spillway is 12560 cfs.

2.2.5 Downstream Hazard Potential - The downstream channel is heavily vegetated but no obstructions to flow were noted. The stream passes under U. S. Hwy 11 about 1000 feet downstream. One house is located adjacent to the channel on the downstream side of the road. About 1500 feet downstream of the dam the stream enters Sweetwater Creek which flows beside a Southern Railway line, across State Highway 68, and into the city of Sweetwater. The dam has a downstream hazard potential classification of high.

2.2.6 Reservoir and Drainage Area - The reservoir has a surface area of 9.4 acres at normal pool elevation with a fetch of 1000 feet. The normal impounding capacity of the reservoir is estimated to be 82 acre-feet. At the top of the dam, the surface area of the lake is estimated to be 30 acres with total storage of 492 acre-feet. The

drainage area is 1005 acres and the predominant soils are Dewey and Fullerton. The watershed land use is estimated to be 20% woods, 79% pasture, and 1% water.

2.2.7 Miscellaneous - The dam is located on the property of Charles O. Browder under an easement to the Sweetwater Creek Watershed District. The dam was built as a floodwater detention facility under PL-566. The dam was designed by the USDA Soil Conservation Service and Inman Moss & Sons of Sweetwater was the contractor. Work was completed in 1978.

SECTION 3 - INSPECTION FINDINGS

3.1 Visual Inspection

3.1.1 Embankment - The dam appeared to be in good condition with no evidence of sloughs, cracks, heaving, or differential settlement. The dam has a dense cover of crown vetch, red clover, and sericea. The upstream slope below the intended normal pool elevation has no protective cover. No seepage was seen below the dam, but the lake level was too low to provide sufficient head to establish normal saturation patterns.

3.1.2 Service Spillway - The service spillway riser and impact basin appear to be in good condition with no visible cracks or spalling. The condition of the pipe appeared good at the outlet.

3.1.3 Drawdown Drain - The drain was closed at the time of inspection. The lift crank was in place, but the drain was not operated during the inspection.

3.1.4 Emergency Spillway - The entrance channel is crossed by a fence and a road embankment. The road embankment is primarily a build up at the side slopes but it is sufficient to cause some disruption of flow. The fence could cause an accumulation of debris in the inlet channel. The spillway has no other obstructions. The channel has a dense grass cover. No indications of sloughing or erosion were seen on the slopes or in the base of the channel.

3.1.5 Downstream Channel - The downstream channel has no obstructions and a dense cover of grass.

3.1.6 Reservoir - The reservoir has a leak which prevents impoundment of a sediment pool. James Sims of the Soil Conservation Service stated that the leak is caused by the underlying cavernous limestone and the leak is believed to be draining through the right abutment into another drainage basin and should, therefore, have no adverse affects on the structural stability of the dam.

3.1.7 Drainage Area - No significant clearing, reforestation, or construction has occurred in the drainage area.

- 3.2 Review of Data - Design plans for the Sweetwater Creek Dam #15 were provided by the Soil Conservation Service. Review of the boring logs indicates that the underlying rock has numerous large cavities with the largest having a depth of more than 12 feet. The design plans were compared to the field measurements assuming the same elevation for the top of the impact basin on each. Field measurements indicate that the elevations of the top of the riser and the emergency spillway crest are about 0.6 feet above the design's elevation and the top of the dam is about 1.2 feet above design elevation. The crest was measured to be about 5 feet wider than called for. The dam otherwise appears to be in accordance with the design plans. None of the differences from the plans appear to be such that the hydraulic adequacy or structural stability of the dam would be significantly affected.
- 3.3 Static and Seismic Stability Assessment - No sloughs, cracks, or other indication of instability were observed on the dam. The dam is located in seismic zone 2. No analysis of the embankment stability was available, but an extensive foundation treatment including grouting of the cavernous dolomite was undertaken to help assure the structural stability of the dam. Under this program, dams in seismic zone 2 are considered adequate under seismic loads if judged adequate to meet static stability requirements.
- 3.4 Hydraulic and Hydrologic Analysis - Under OCE guidelines, dams in the intermediate size and high hazard potential categories are required to pass the PMF. The PMF (AMC II) was used as the freeboard design storm with the pool elevation 2.5 feet above normal pool elevation at the onset of the storm. With the 200 foot base width of the emergency spillway, the storm passes with no remaining freeboard. The 10-day, 100-year storm was used as the emergency spillway design storm. The storm was routed through the service spillway to set the emergency spillway crest at 981' msl. The 6-hour, 100-year storm (AMC III) produced flow through the emergency spillway for about 2.9 hours with a maximum depth of 0.6 feet.

3.5 Conclusions and Recommendations

3.5.1 Conclusions

- a. The dam is considered adequate with respect to hydraulic and hydrologic considerations.
- b. Based on visual observation and engineering judgment, the dam is considered statically stable and, since the dam is in seismic zone 2, the dam is considered adequate to meet seismic stability requirements.
- c. The leak which prevents the lake from filling is apparently caused by an open solution channel in the underlying dolomite. The leak should have no direct effect on the dam.
- d. The unprotected lower portion of the upstream slope could be damaged by surface runoff and fluctuations of the water surface.
- e. Based on the above conclusions, the dam is considered to be "not deficient".

3.5.2 Recommendations

- a. The lower portion of the upstream slope should have some type of protection such as a vegetative cover.
- b. An emergency action plan should be developed to alert downstream residents in the event a potentially hazardous situation arises.
- c. A program of routine maintenance and periodic inspection should be established.

SECTION 4 REVIEW BOARD FINDINGS

The Interagency Review Board for the National Program of Inspection of Non-Federal Dams met in Nashville on 3 September 1981 to examine the technical data contained in the Phase I investigation report for Sweetwater Creek Watershed Dam No. 15. The Review Board considered the information and agreed with the report conclusions and recommendations. A copy of the letter report presented by the Review Board is included in Appendix F.

APPENDIX A
DATA SUMMARY

APPENDIX A
DATA SUMMARY

A.1 Dam

A.1.1 Type - Earthfill linear alignment dam with a concrete pipe service spillway and draw-down drain and a vegetated earth emergency spillway.

A.1.2 Dimensions and Elevations - (Elevations are referenced to design elevation of impact basin, 947.5'. Design measurements are shown parenthetically if different from field measurements.)

- a. Crest length - 1100'
- b. Crest width - 19' (14')
- c. Height - 48.2' (46')
- d. Crest elevation - 990.1' msl (988.9' msl)
- e. Emergency spillway elevation - 981.6' msl (981.0' msl)
- f. Service spillway elevation - 964' msl
- g. Embankment slope, U/S - 1V:2.9H (1V:3H)
- h. Berm elevation, U/S - 966.9' msl
- i. Berm width, U/S - 36'
- j. Embankment slope, D/S - 1V:2.9H (1V:3H)
- k. Berm elevation, D/S - 972.1' msl
- l. Berm width, D/S - 30'
- m. Size classification - Intermediate

A.1.3 Zones - (Homogeneous core covered with impervious blanket)

- a. Core material - CH and MH
- b. Blanket material - SC
- c. Blanket depth, vertical - 5'

A.1.4 Cutoff Trench

- a. Fill material - CL and SC
- b. Base width - 20'
- c. Side slopes - 1V:2.5H
- d. Bottom elevation (min.) - 934' msl (approx.)

A.1.5 Grout Curtains

- a. Bottom elevation - 895-920' msl

A.1.6 Instrumentation - None

A.1.7 Drainage Filter - Chimney, trench, and blanket drain of sand graded to gravel.

a. Top elevation (chimney drain) - 925' msl

A.1.8 Operation and Maintenance - Section 70-1801 through 70-1849 of the Tennessee Code Annotated (Watershed District Act of 1955) provides for the establishment of the Watershed Districts and the Watershed District Boards. Easement rights for the construction of the Sweetwater Creek Dam were obtained by the Board from the local property owners. The extent of ownership retained by the individuals is being negotiated, with the stipulation (Section 70-1847) that the Board has full operation and maintenance authority.

According to the SCS District Conservationist, the Watershed District is to make periodic inspections of the dams as needed and at least annually to determine any remedial measures needed.

A record of the inspections and maintenance operations is to be kept on file and will be available for use by representatives of the SCS. Specific maintenance agreements are to be executed prior to the construction of structural works of improvement.

A.2 Reservoir and Drainage Area

A.2.1 Reservoir - (Normal pool elevation 964' msl, 12.9' below the crest of the dam)

- a. Surface area (normal) - 9.4 acres
- b. Surface area (top of dam) - 30 acres
- c. Fetch - 1000'
- d. Capacity (normal) - 82 acre-feet
- e. Capacity (top of dam) - 492 acre-feet

A.2.2 Drainage Area

- a. Size - 1005 acres
- b. Maximum relief - 250'
- c. Reach - 8000'
- d. Soils - Fullerton (HSG B), Dewey (HSG B)
- e. Cover - Woods 20%, pasture 80%
- f. Runoff, 6-hr PMP (AMC II) - 2068 acre-feet
- g. Runoff, 6-hr P₁₀₀ (AMC III) - 302 acre-feet

A.3 Outlet Structures

A.3.1 Service Spillway - (SCS standard covered two stage riser leading to an AWWA Spec C-301 RC pipe, with standard impact basin)

- a. Low stage elevation - 964.0' msl
- b. Low stage inlet size - 1.8' x 2.5'
- c. High stage elevation - 967.7' msl
- d. High stage inlet size - 2 @ 1.25' x 7.5'
- e. Pipe diameter - 30" ID
- f. Pipe slope - 2%
- g. Antiseep collars (size) - 11.3' x 7.7' x 0.6'
- h. Antiseep collars (numbers & spacing) - 10 @ 16'
- i. Capacity - 124 cfs

A.3.2 Drawdown Drain - (Slide gate at base of service spillway riser)

- a. Inlet diameter - 24"
- b. Invert elevation - 947.0' msl

A.3.3 Emergency Spillway - (Uncontrolled vegetated trapezoidal earth saddle on the left abutment)

- a. Base width - 200'
- b. Control section length - 30'
- c. Control section elevation - 981.6' msl (981.0')
- d. Side slopes - 1V:3.6H lt., 1V:4.6H rt. (1V:3H)
- e. Maximum head - 8.5' (7.9')
- f. Capacity - 12560

A.4 Historical Data

- A.4.1 Construction Date - 1978
- A.4.2 Designer - Soil Conservation Service
- A.4.3 Builder - Inman Moss & Son, Sweetwater, TN
- A.4.4 Property Owner - Charles O. Browder
- A.4.5 Previous Inspections - SCS annual inspection
- A.4.6 Seismic Zone - 2

A.5 Downstream Hazard Data

A.5.1 Downstream Hazard Potential Classification

- a. Corps of Engineers - High
- b. State of Tennessee - 1

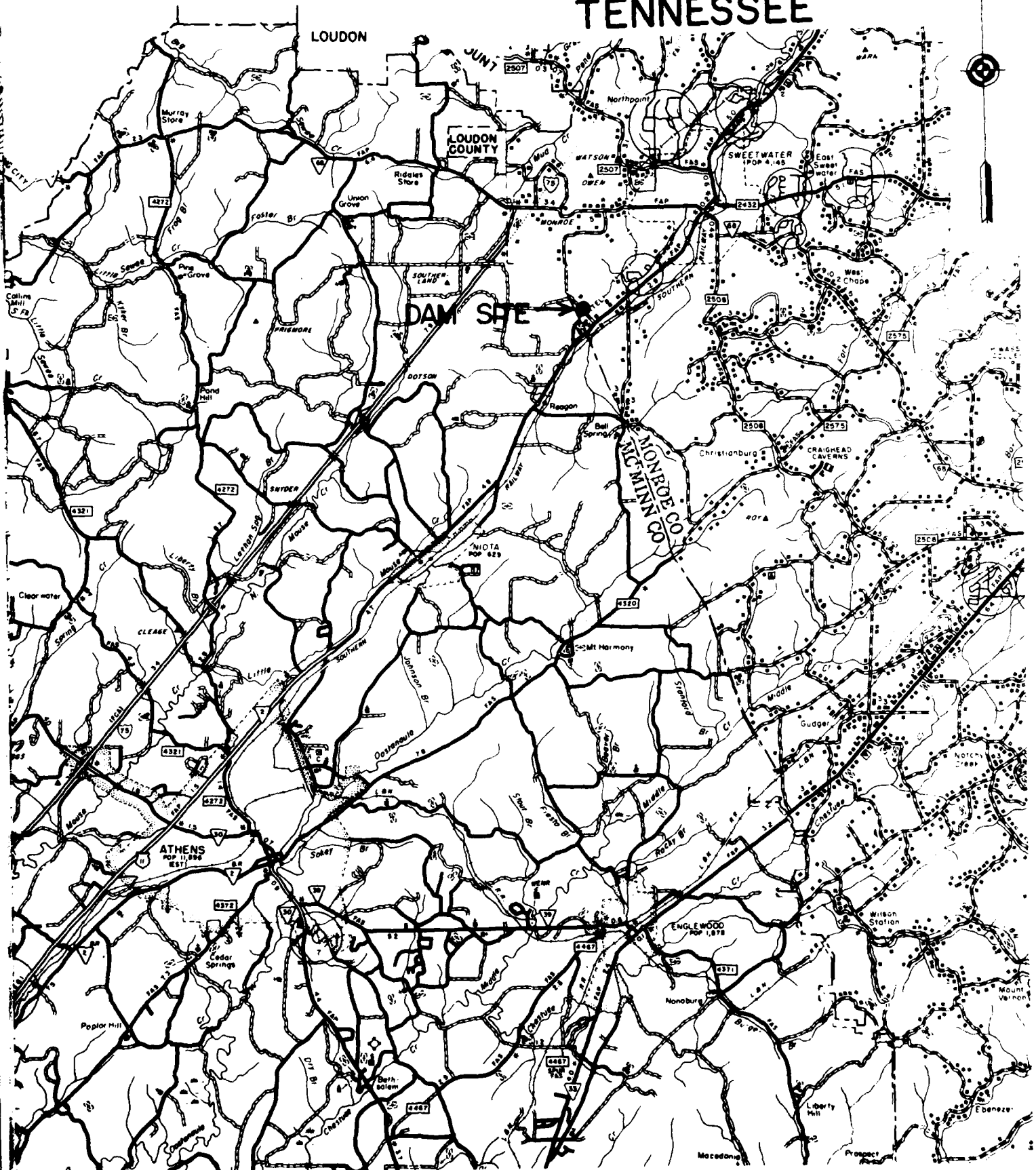
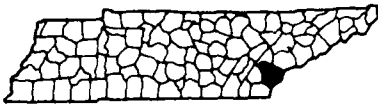
A.5.2 Persons in Probable Flood Path - 4

A.5.3 Downstream Property - U. S. Hwy 11, Southern
Railway

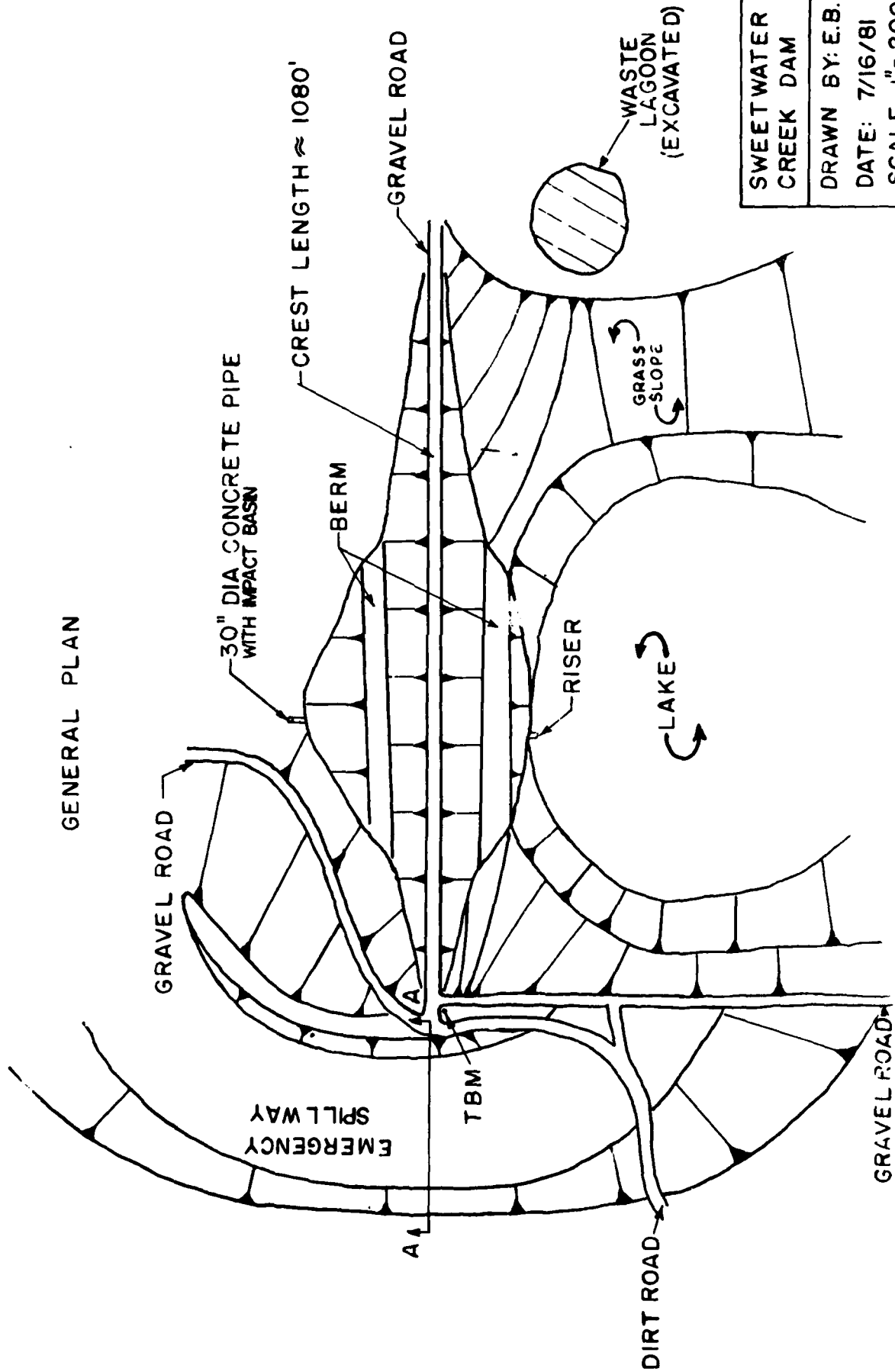
A.5.4 Warning Systems - None

APPENDIX B
SKETCHES AND LOCATION MAPS

GENERAL HIGHWAY MAP
MONROE COUNTY
TENNESSEE



GENERAL PLAN



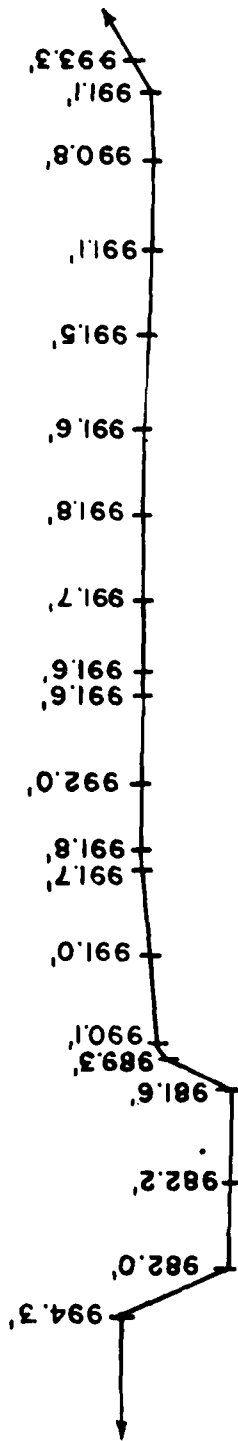
SWEETWATER
CREEK DAM

DRAWN BY: E.B.P.

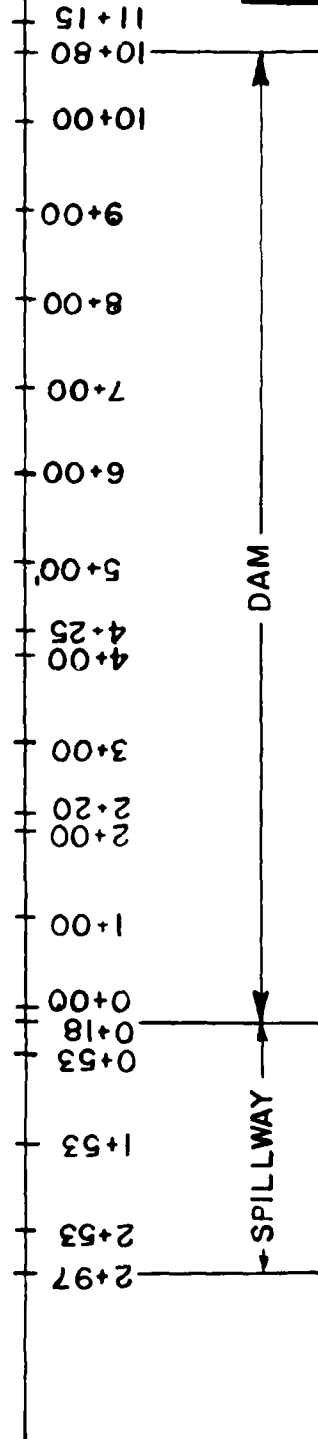
DATE: 7/16/81

SCALE 1" = 200'

DAM PROFILE



Δ NORMAL POOL 965.4'

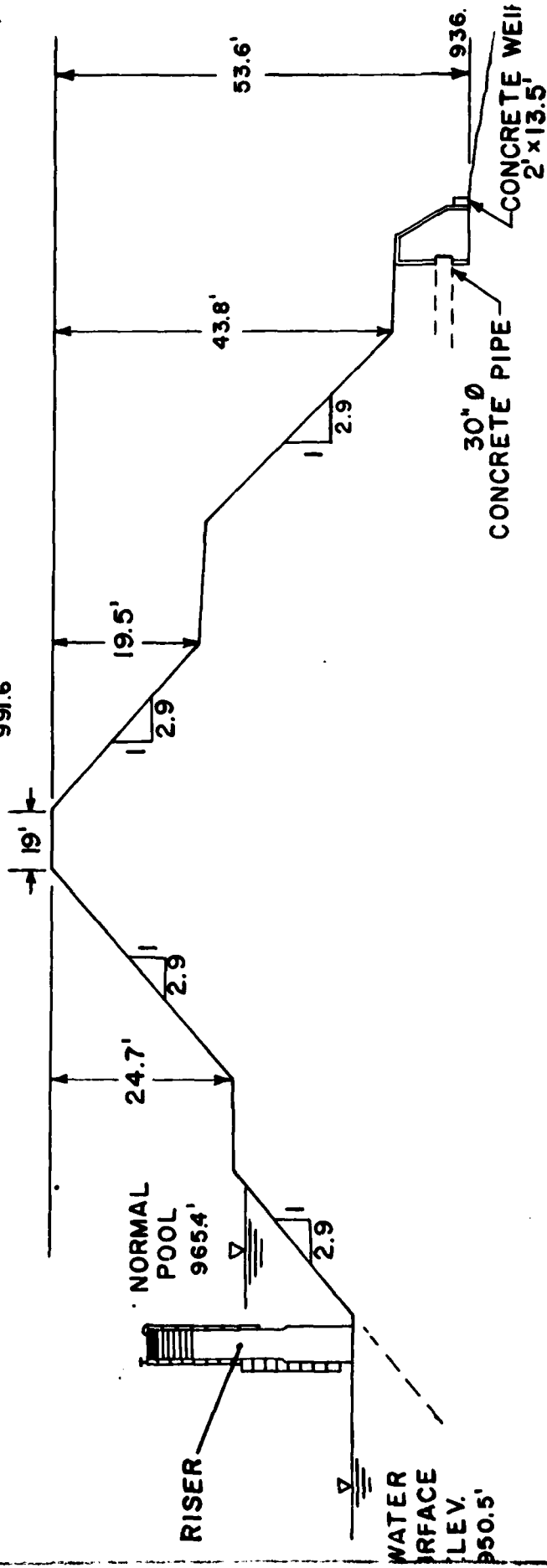


SWEETWATER
CREEK DAM

DRAWN BY: E.B.F.
DATE: 7/13/81
HOR. SCALE 1"=20'
VERT. SCALE 1"=2'

MAXIMUM SECTION AT 4+25

CREST ELEV.
991.6'



SWEETWATER
CREEK DAM

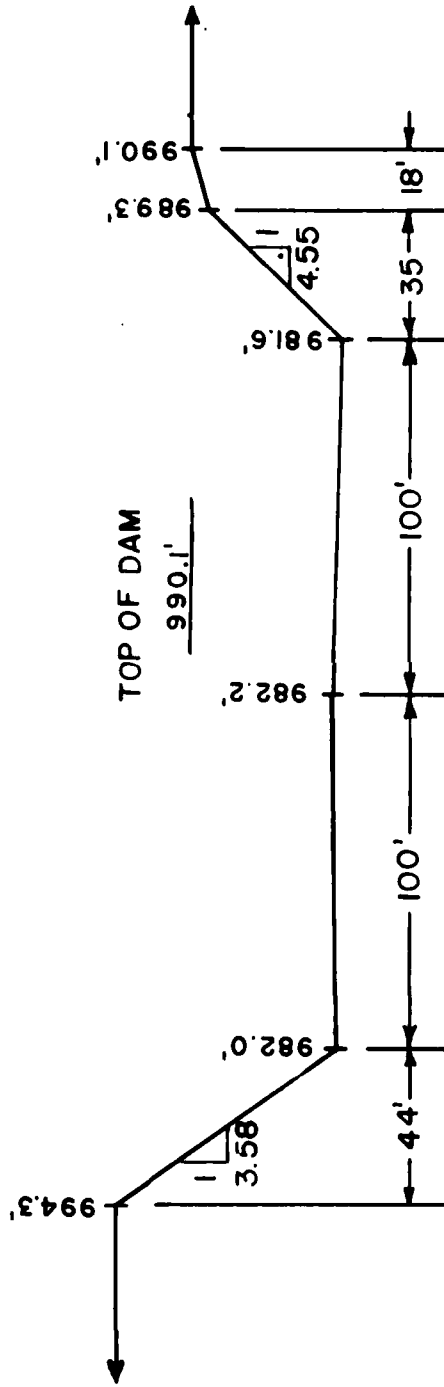
DRAWN BY: E.B.P.

DATE: 7/17/81

HOR. SCALE 1"=50'

VERT. SCALE 1"=2'

SPILLWAY CROSS-SECTION A-A



SWEETWATER
CREEK DAM

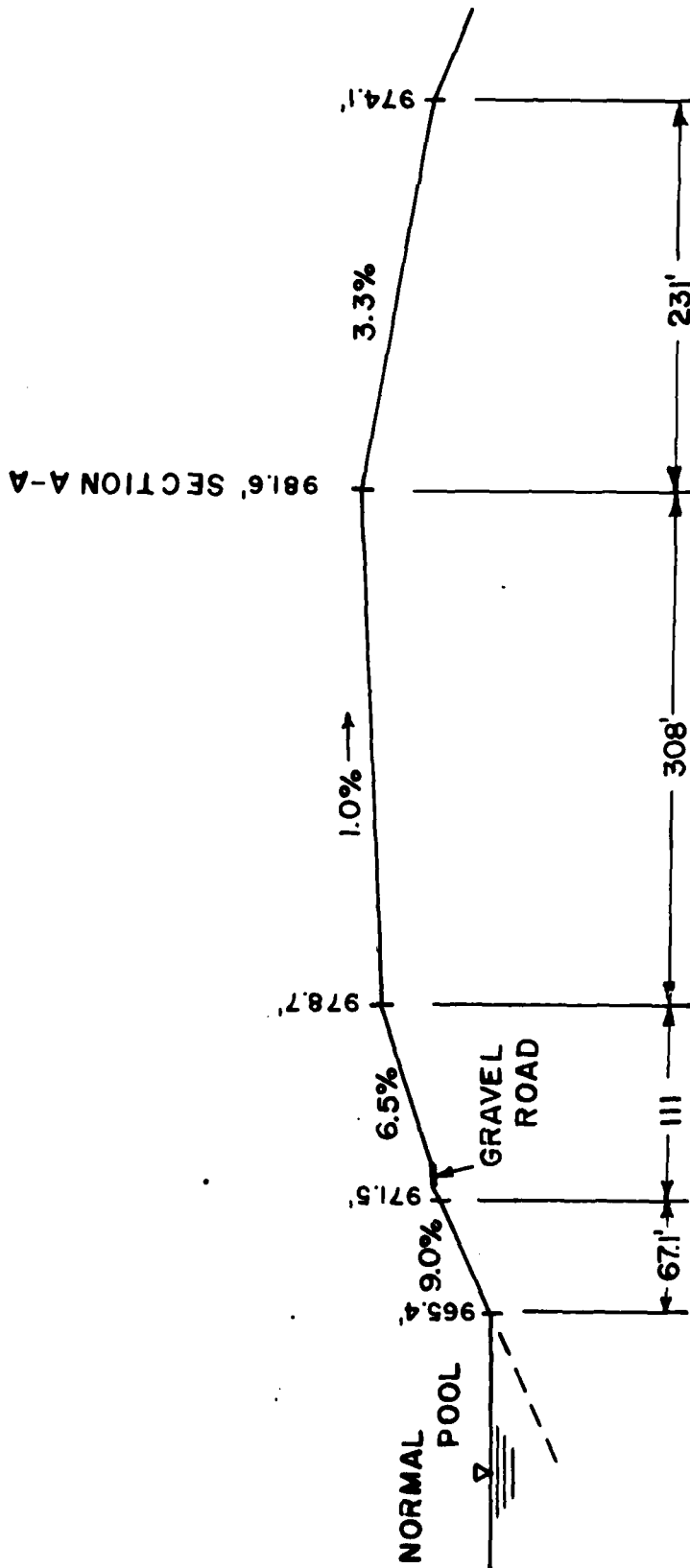
DRAWN BY: E.B.P.

DATE: 7/15/81

VERT. SCALE 1"=10'

HOR. SCALE 1"=50'

SPILLWAY PROFILE



SWEETWATER
CREEK DAM

DRAWN BY: E.B.P.
DATE: 7/15/81
HOR. SCALE 1"=10'
VERT. SCALE 1"=2'

APPENDIX C
PHOTOGRAPHIC RECORD

APPENDIX C
PHOTOGRAPHIC RECORD

Photo No. 1 - The information plaque for the dam.

Photo No. 2 - The upstream slope of the dam from the left abutment.

Photo No. 3 - The downstream slope of the dam from the right end of the downstream berm.

Photo No. 4 - Looking up at the downstream slope from a point below the toe.

Photo No. 5 - The service spillway riser and the lake area from the crest. Note the low water level.

Photo No. 6 - The service spillway impact basin.

Photo No. 7 - The entrance to the emergency spillway channel.

Photo No. 8 - The emergency spillway exit channel.

Photo No. 9 - The downstream area from the crest of the dam.

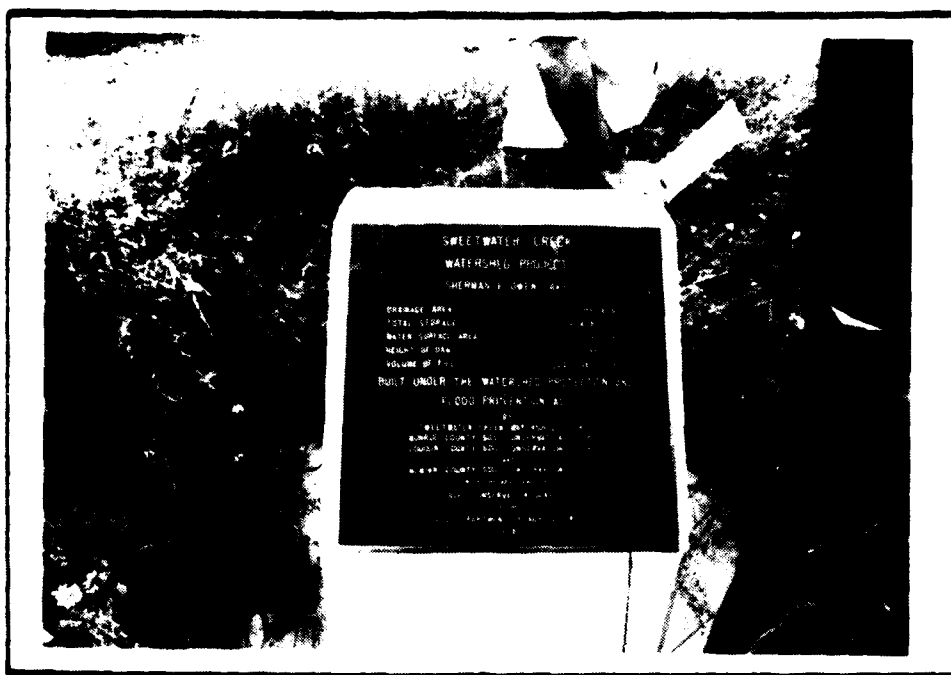


PHOTO NO.1

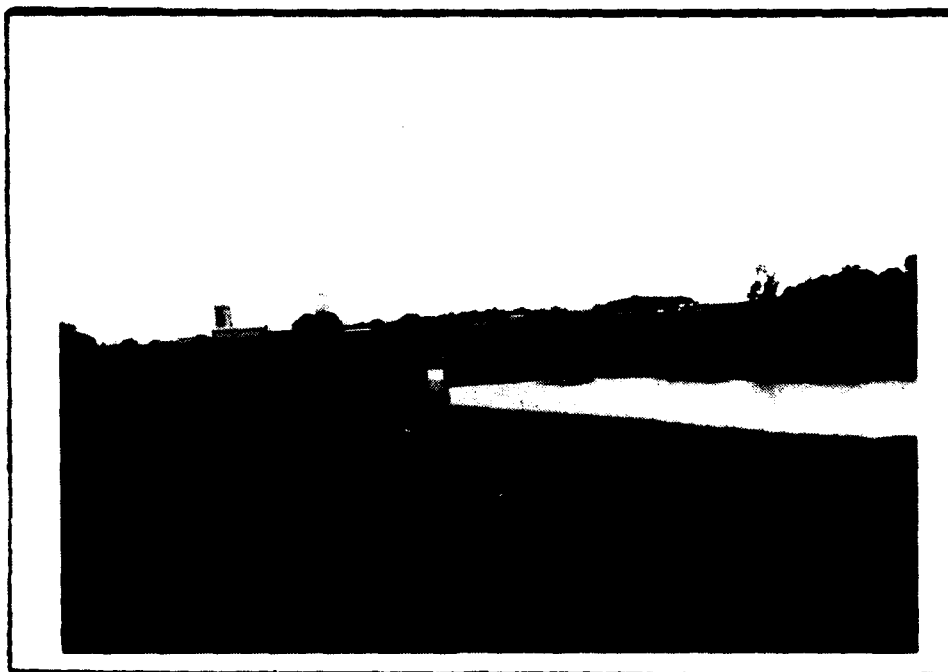


PHOTO NO.2



PHOTO NO.3

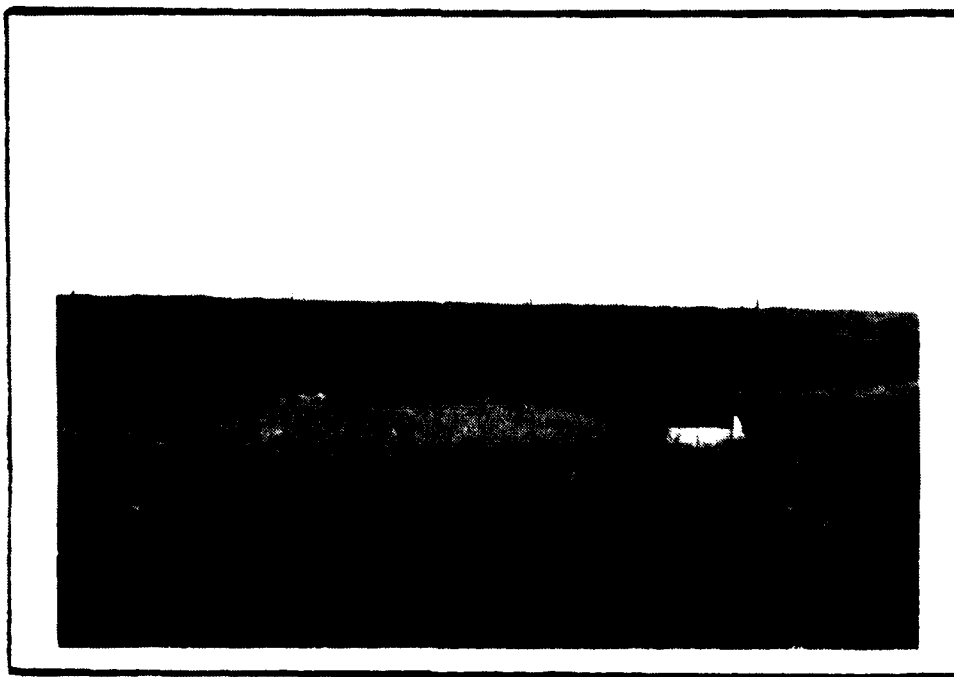


PHOTO NO.4

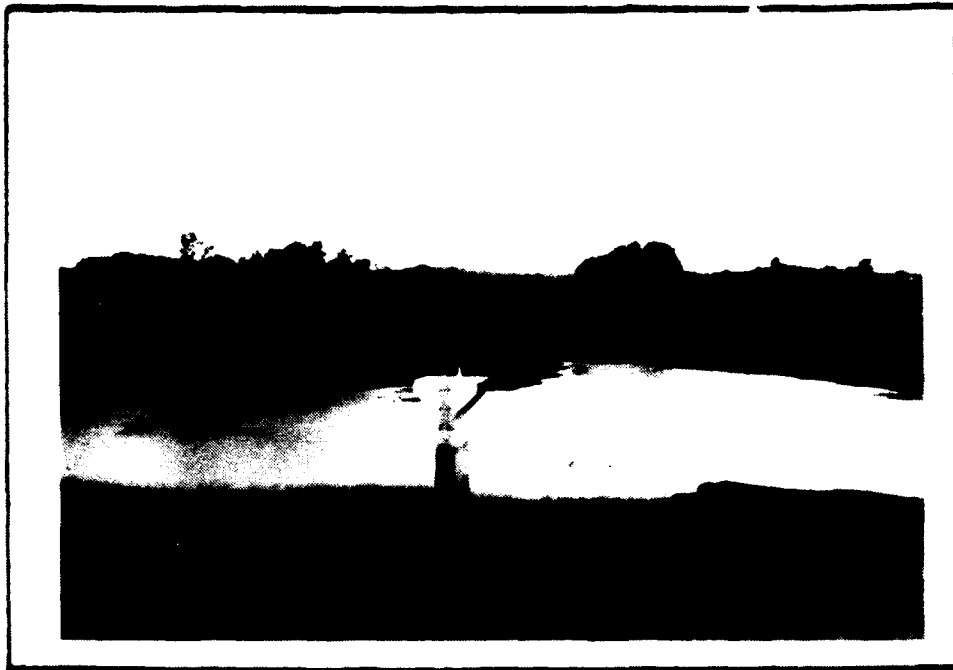


PHOTO NO.5

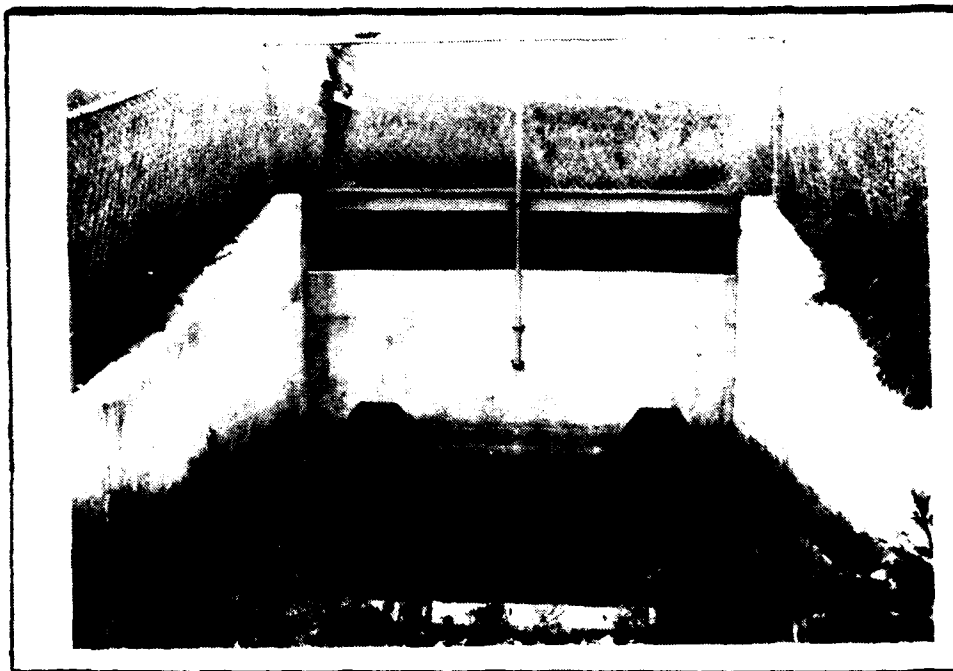


PHOTO NO.6

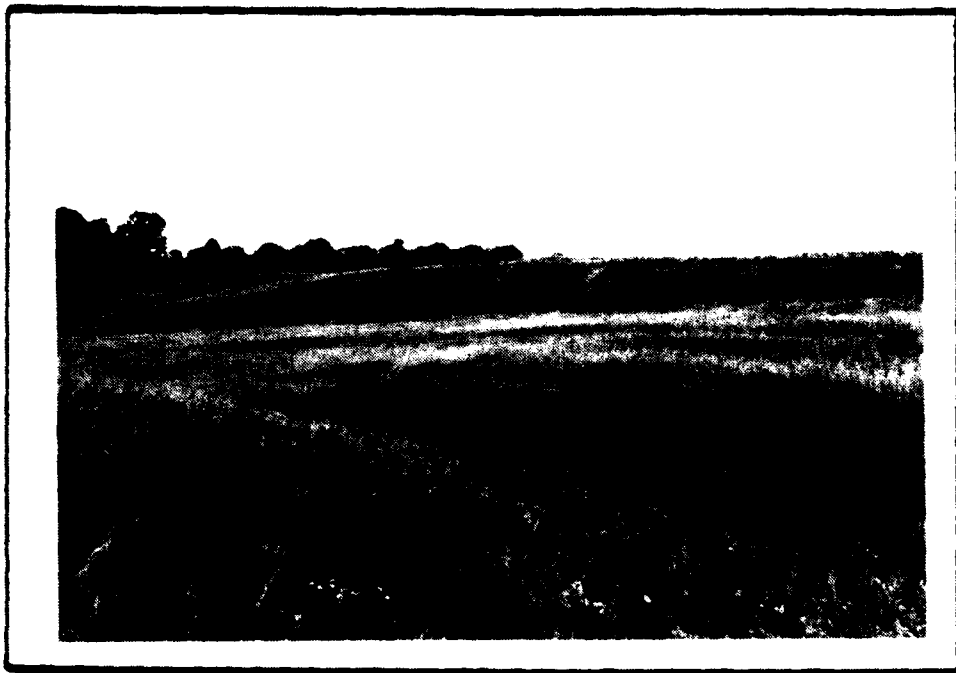


PHOTO NO.7



PHOTO NO.8

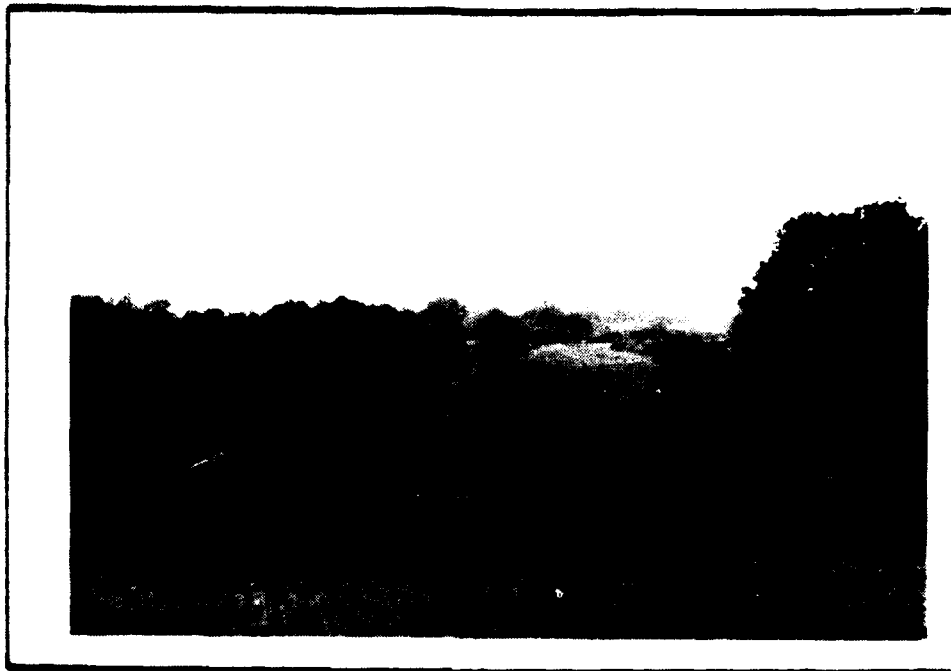


PHOTO NO.9

PHOTO NO.

APPENDIX D
HYDRAULICS AND HYDROLOGY

HYDRAULICS AND HYDROLOGY

Sweetwater Creek Dam #15 is located in Monroe County, Tennessee. The watershed land use is about 20% woods and 80% pasture. Dewey and Fullerton are the predominant soil groups and both are classified as hydrologic soil group "B". The runoff curve number was calculated to be 72 AMC II.

The Sweetwater Creek Dam #15 is classified as an intermediate size, high hazard potential dam. As such, it is required to pass the probable maximum flood (PMF) without overtopping. The PMF is derived from the probable maximum precipitation (PMP). Using the U. S. Weather Service TP-40, the 6-hour PMP was estimated to be 28.9 inches yielding 24.7 inches of runoff (RCN 72, AMC II).

The total inflow into the reservoir during the PMF is about 2068 acre-feet with a peak rate of 13119 cfs. The reservoir has a maximum storage above normal pool of 452 acre-feet. The PMF was used as the freeboard design storm and it passes the dam with no remaining freeboard. The PMF routing started with a pool elevation of 966.5 (2.5 feet above normal pool elevation). This elevation was obtained after a ten day drawdown with the starting elevation of 981.0 (the crest of the emergency spillway).

The 10-day, 100-year flood produces 545 acre-feet of inflow. Routing of the storm requires 231 acre-feet of storage. This routing was used to set the crest of the emergency spillway at elevation 981 feet msl.

The 6-hour, 100-year flood containing 5.15 inches of precipitation was routed through the reservoir using a RCN of 86 (AMC III). This produces a runoff of 3.61 inches and a peak discharge of 1161 cfs. This storm produced a peak discharge of 280 cfs. Flow through the emergency spillway lasted about 2.9 hours reaching a maximum depth of about 0.6 feet.

Except for the 6-hour P_{100} , all information is from calculations performed by the SCS design engineers using the DAMS 2 program. Check calculations indicate that the design data are more conservative than the figures which would have been used if the design calculation were not available.

The 6-hour, 100-year flood hydrograph was developed using the methods in Section 4, Chapter 21 of the SCS National Engineering Handbook. The routing equation used was:

$$I_1 + I_2 + \left(\frac{2S}{\Delta t} \right) - O_1 = \frac{2S}{\Delta t} + O_2$$

George E. Moore
George E. Moore
Regional Engineer

SWEETWATER CREEK #15

EVENT	ANTECEDENT MOISTURE CONDITION	
	II	III
6 hr. PMF	Passes with 0' of freeboard	Overtopped with max. depth of 1' and a duration of .48 hrs.
6 hr. 1/2 PMF	Not routed Assumed to pass	Passes with 2.4' of freeboard
6 hr. 100 - YEAR	Not routed	Passes with flow in emergency spillway for 2.9 hrs; maximum depth 0.7'
1-10 day P ₁₀₀	Passes at crest of emergency spillway	Not routed

SWEETWATER CREEK #15 HYDRAULICS + HYDROLOGY *gaml*

3 JUNE 91

VALUES TAKEN FROM DESIGN CALCULATIONS

6 hr $P_{100} = 5.15$ IN
 6 hr PMP = 28.9 IN
 1 DAY $P_{100} = 6.8$ IN
 10 DAY $P_{100} = 13.0$ IN

$T_c = .79$ hr
 RCN = 72 AMC II

$Q_{ES} = 12875$ cfs
 $Q_{PS} = 125$ cfs

VALUES COMPUTED AS CHECK

6 hr $P_{100} = 5.0$ IN
 6 hr PMP = 28.9 IN
 1 DAY $P_{100} = 6.8$ IN
 10 DAY $P_{100} = 13.2$ IN

$T_c = 1.12$ hr
 RCN = 69 AMC II

$Q_{ES} = 14820$ cfs
 $Q_{PS} = 133$ cfs

SWEETWATER CREEK DAM #15 PMF (AMCIII) HYDROGRAPH AND ROUTING

RCN = 86 (AMCIII)

PMF = 28.9 IN

Q = 270 IN

L = .307 hr

T_e = .512 hr

T_p = .358 hr

HYDROGRAPH FAMILY #1

T₀ = 5.85 hr

T₀/T_p = 16.3

REV T₀/T_p = 16

REV T_p = .366 hr

ADJUSTED FOR AMCIII CONDITIONS USING $L = \frac{2.9(S+1)^{0.7}}{1900 \sqrt{S}}$
WITH $S = \left(\frac{1000}{CN} - 10 \right)$

g_p = 2079 cfs/in

Q_{gp} = 56125 cfs

g_{max} = 17343 cfs @ 2.41 hr

TIME (hr)	INFLOW (cfs)	$\frac{2S}{\Delta t} - 0$	$\frac{2S}{\Delta t} + 0$	OUTFLOW (cfs)	
0	0	0	0	0	
.24	56	52	56	2	
.48	337	419	445	13	
.72	842	1542	1598	28	
.97	1515	3815	3899	42	
1.21	2077	7303	7407	52	
1.45	2638	11872	12018	73	
1.69	3480	17772	17990	109	
1.93	5169	25376	26416	520	
2.17	12516	29656	43056	6700	
2.41	17343	28296	59516	15610	OVERTOPS
2.65	12638	28377	59277	15950	
2.90	9597		51612	10900	BELOW TOP OF DAM
3.14	6960				
3.38	5444				
3.62	4546				
3.86	3929				
4.10	3424				
4.34	3087				
4.58	2806				
4.83	2638				
5.07	2526				

SWEET WATER CREEK DAM #15 $\frac{1}{2}$ PMF ROUTING

gpm.

TIME (HR)	INFLOW (cfs)	$2\frac{1}{2}t - 0$	$2\frac{1}{2}t + 0$	OUTFLOW (cfs)
0	0	0	0	0
.24	28	26	28	1
.48	168	214	222	4
.73	421	767	803	18
.97	758	1882	1946	32
1.21	1038	3594	3678	42
1.45	1319	5855	5951	48
1.69	1740	8800	8914	57
1.94	2581	12963	13121	79
2.18	6257	21581	21801	110
2.42	8670	28089	36501	3910
2.66	6818	29676	44176	7250
2.90	4798		41292	5900
3.15	3479			
3.39	2722			
3.63	2273			
3.87	1964			
4.11	1711			
4.36	1543			

per 1000 ft. EL 9300 ft. m. l.

SWEET WATER CREEK #15

AMC III P100 INFLOW HYDROGRAPH AND ROUTING

RCN = 86 AMC III

P100 = 5.15 IN

Q = 3.61 IN

L = .307 hr

T_c = .512 hrT_p = .350 hr

HYDROGRAPH FAMILY # 2

T_b = 5.2 INT_b/T_p = 14.5REV T_b/T_p = 16REV T_p = .325 hrq_p = 2339 cfs/inQ_{gp} = 8442 cfsg_{max} = 2339 cfs @ 1.76 hr

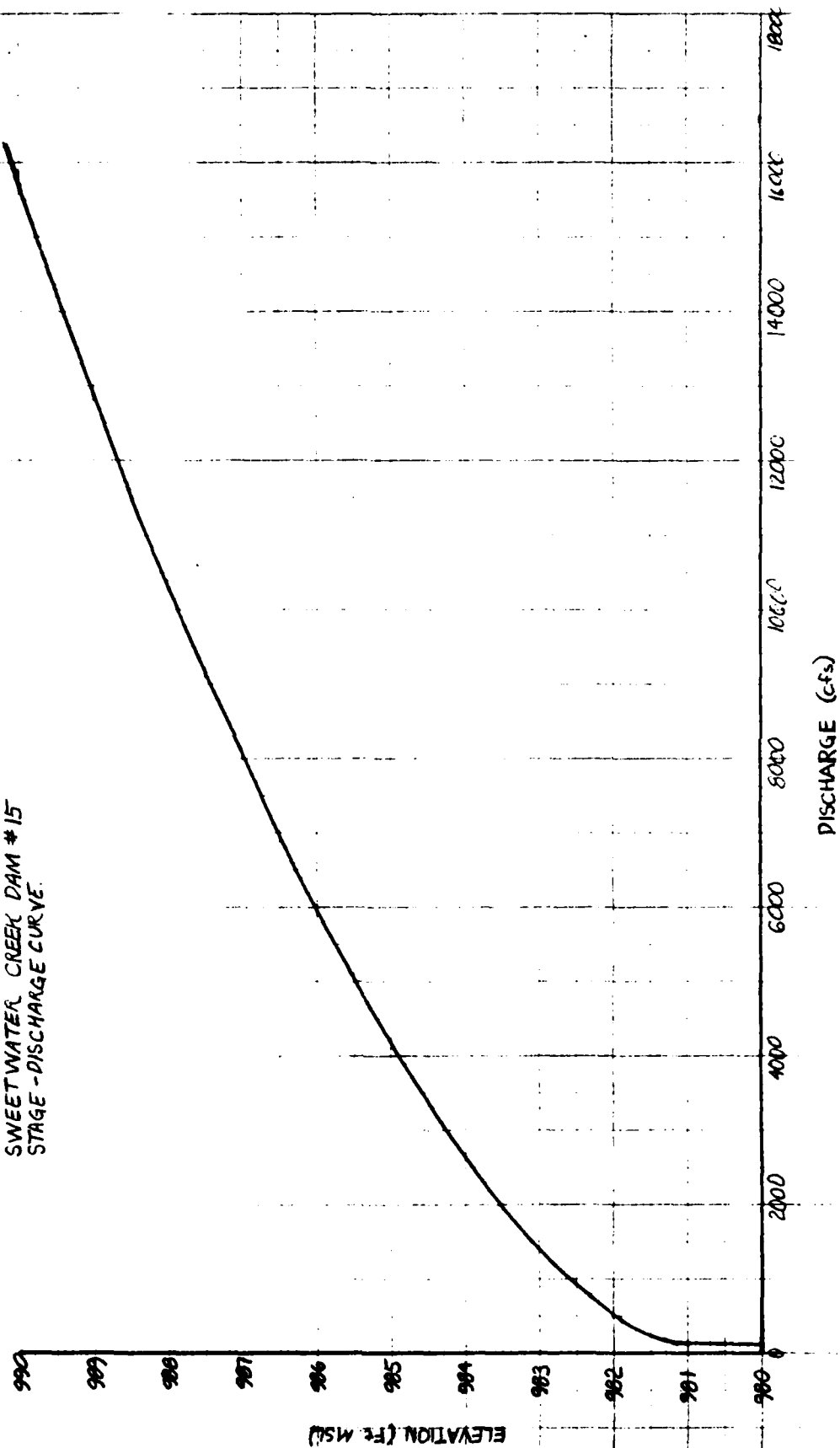
TIME (hr)	INFLOW (cfs)	$\frac{2S}{\Delta t} - 0$	$\frac{2S}{\Delta t} + 0$	OUTFLOW (cfs)
0	0	0	0	0
.29	17	17	17	0
.59	59	87	93	3
.88	169	295	315	10
1.17	312	736	776	20
1.46	1249	2223	2297	37
1.76	2339	5709	5811	51
2.05	1807	9713	9855	71
2.34	1258	12588	12778	95
2.63	946	14574	14792	109
2.93	743	16043	16263	110
3.22	616	17180	17402	111
3.51	532	18106	18328	111
3.80	473	18887	19111	112
4.10	439	19445	19799	177
4.39	405	19799	20289	245
4.69	380	20004	20584	290
4.97	371	20115	20755	320
5.27	355	20171	20841	335
5.56	194	20096	20720	312
5.85	51	19841	20341	250
6.14	25	19529	19917	194
6.44	8	19262	19562	150
6.73	0	19022	19254	116
			19022	

PASSES CREST

PEAK PASSES.

BELOW CREST

SWEETWATER CREEK DAM #15
STAGE-DISCHARGE CURVE

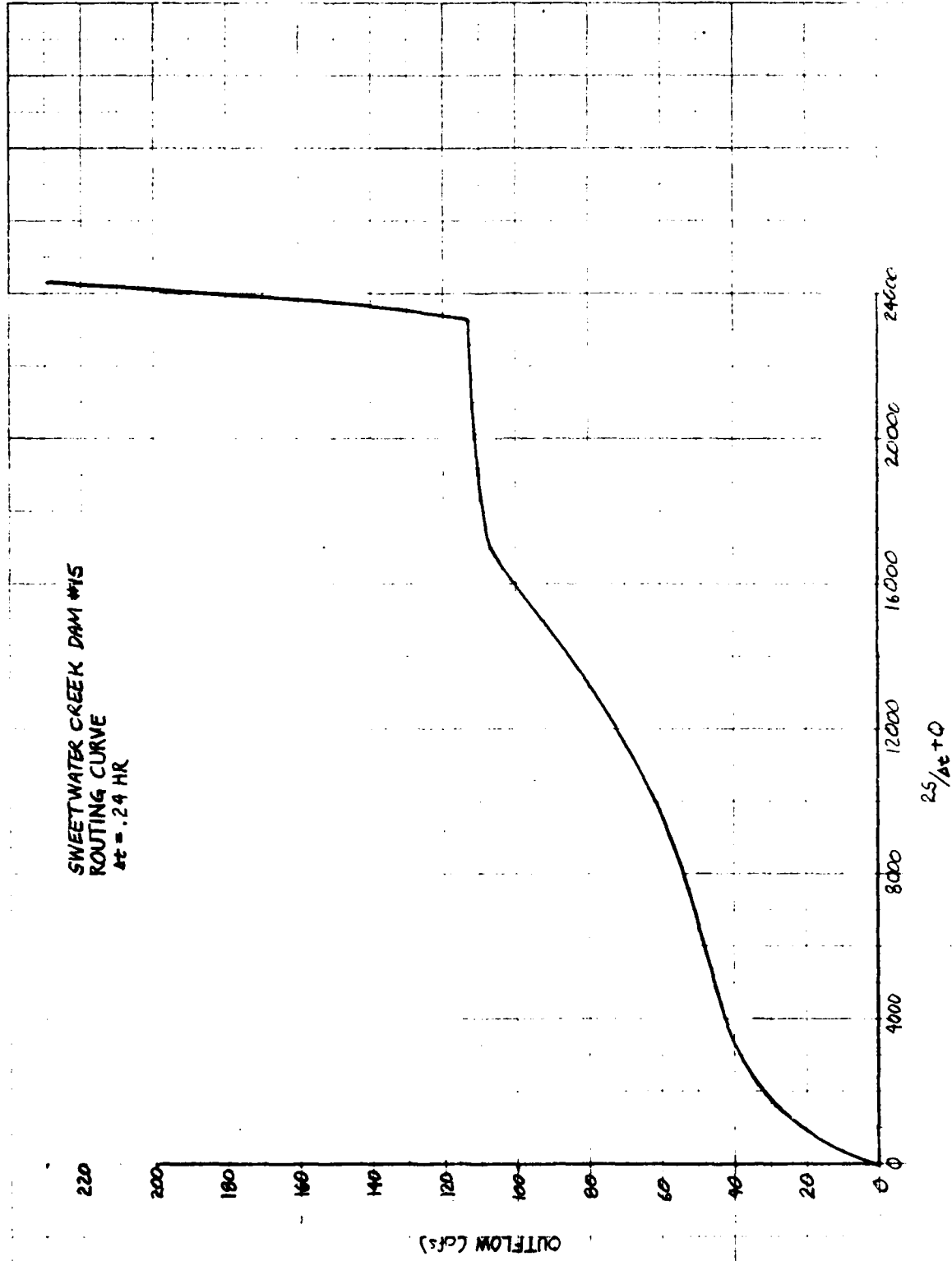


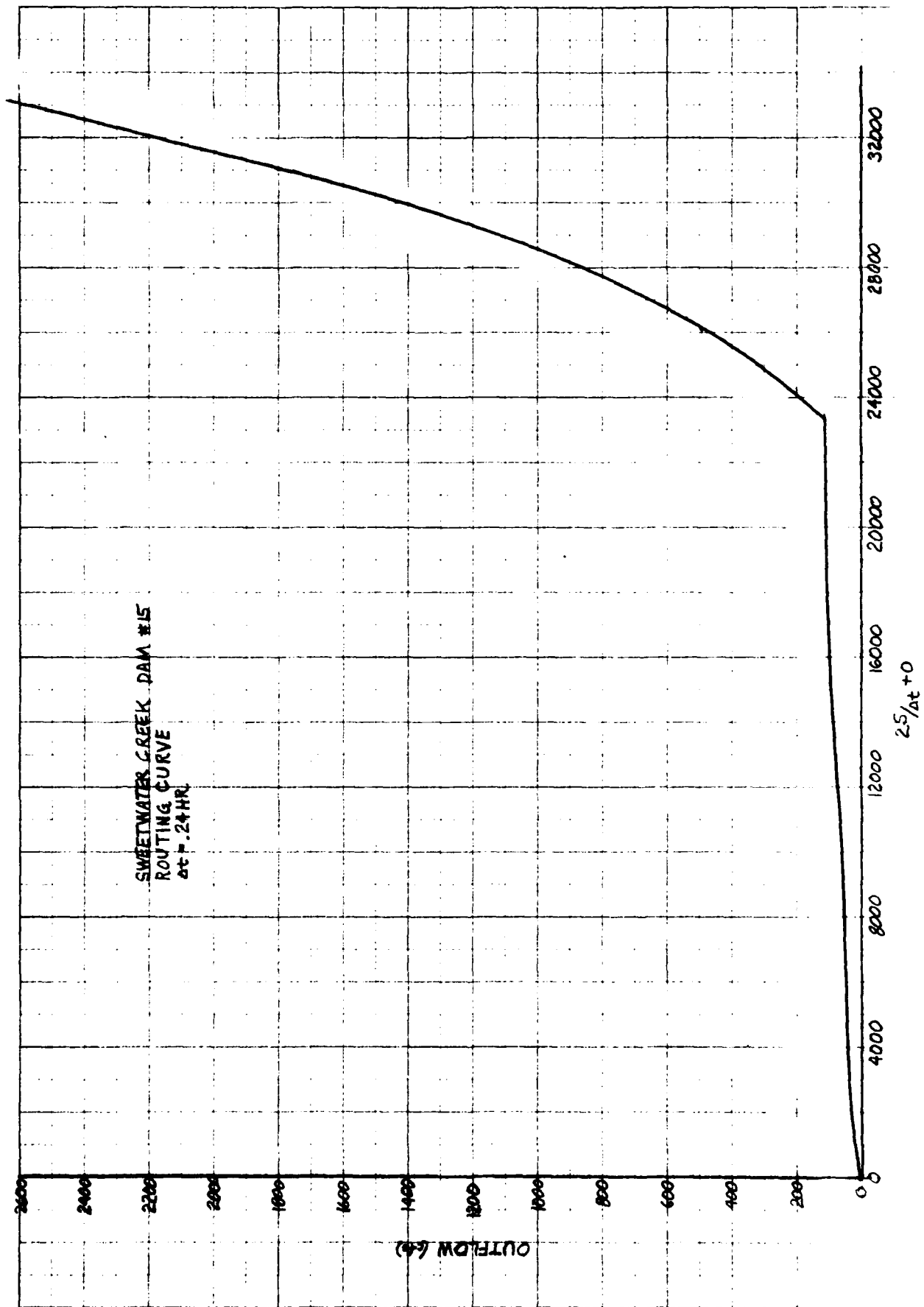
SWEETWATER CREEK DAM #15 ROUTING CURVE CALCULATIONS

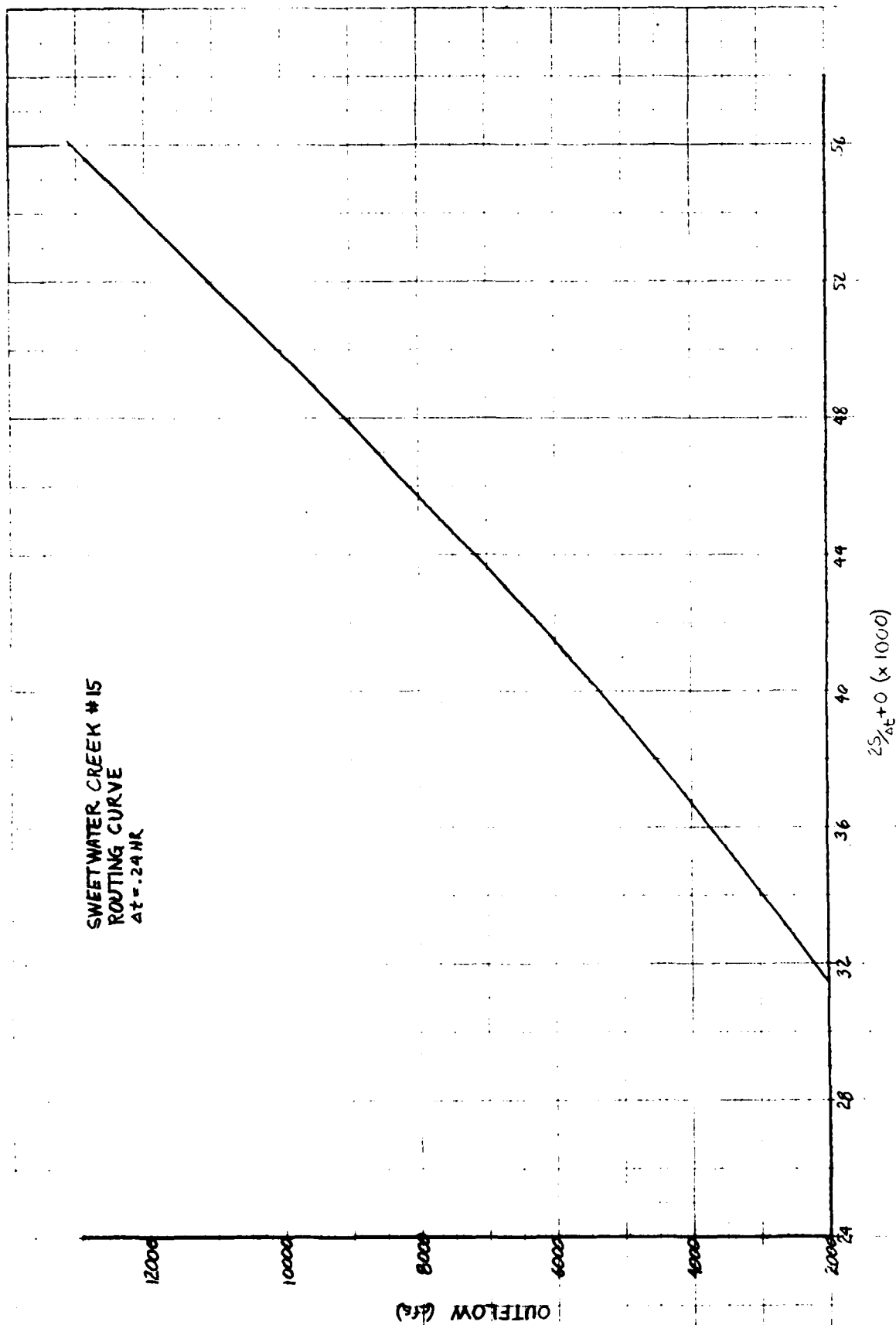
ELEVATION (Ft MSL)	STORAGE (Ac-ft)	STORAGE (cfs)	$\frac{S}{\Delta t}$ (.24 hr cfs)	OUTFLOW (cfs)	$\frac{S}{\Delta t} + O$
965	0	0	0	0	
	1				
968	161	8.12	807.3	29.1	1647
970	41.1	20.72	2061	42.6	4164
974	98.1	49.46	4919	61.3	9899
978	168.1	84.75	8429	107.5	16965
980	208	104.87	10429	110.8	20970
981	230.9	116.41	11578	112.4	23268
981.5	241.0	121.50	12084	229.1	24290
982	255	128.56	12786	497.7	26070
984	304	153.26	15243	2630.2	33116
986	353	177.97	17700	5955.3	41355
989	426	214.77	21360	12875.2	55596
989.5	438	220.99	21916	15500	59322
990	451	227.21	22530	19200	64266

TOP of DAM

$$Q = 3.087 L H_m^{3/2} \quad L = 1100 \text{ ft}$$



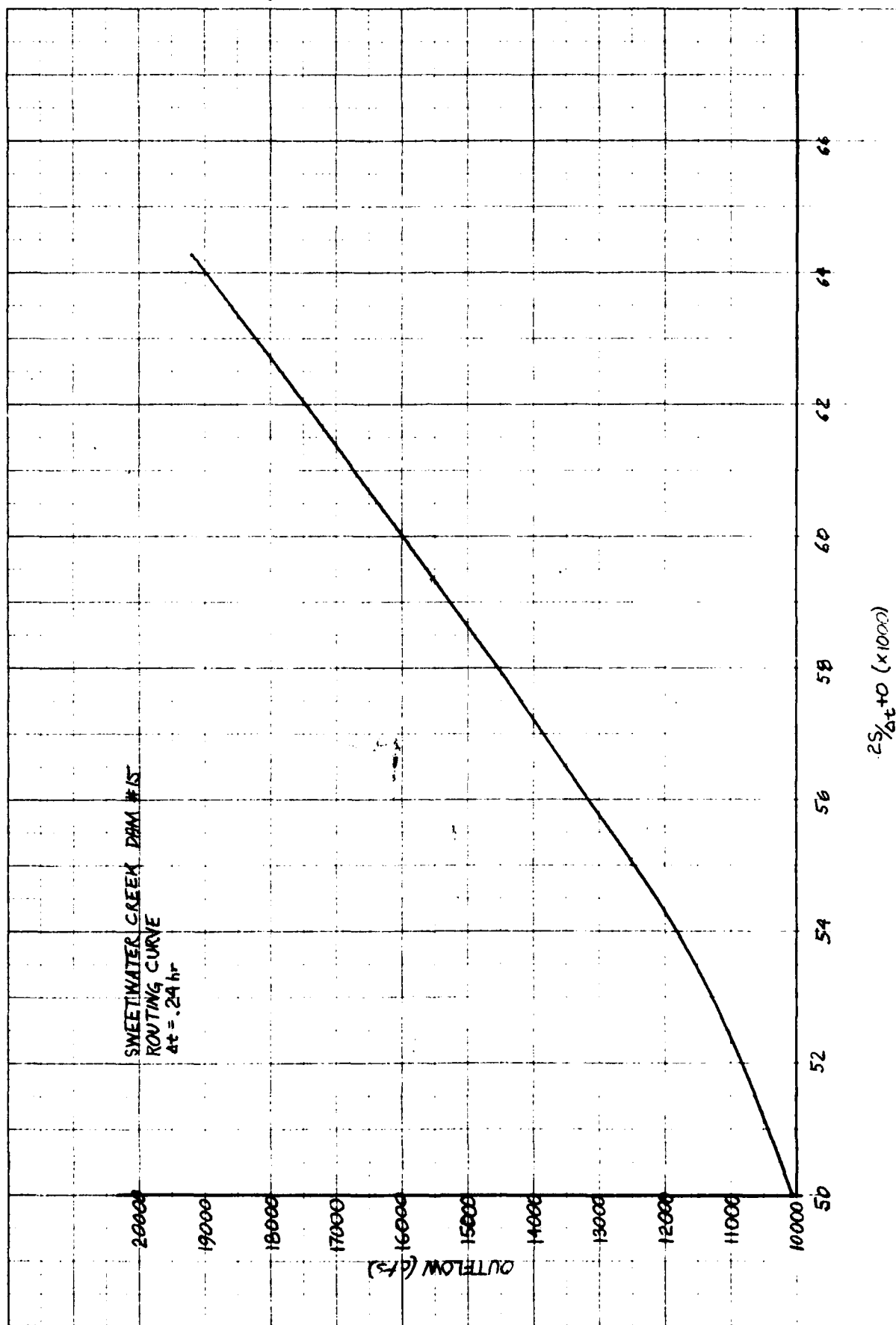




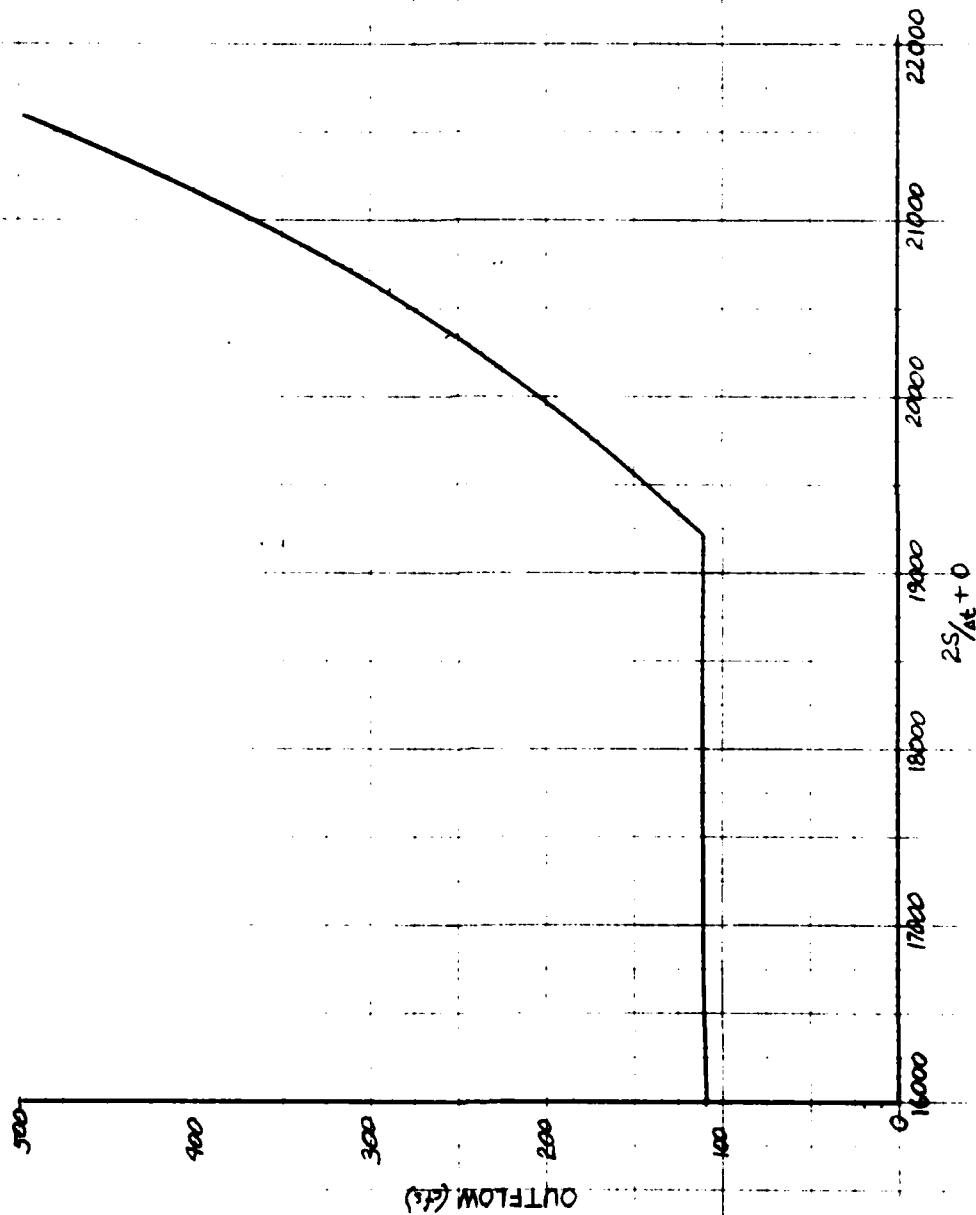
SWEETWATER CREEK #15 ROUTING CURVE CALC. 2pm.

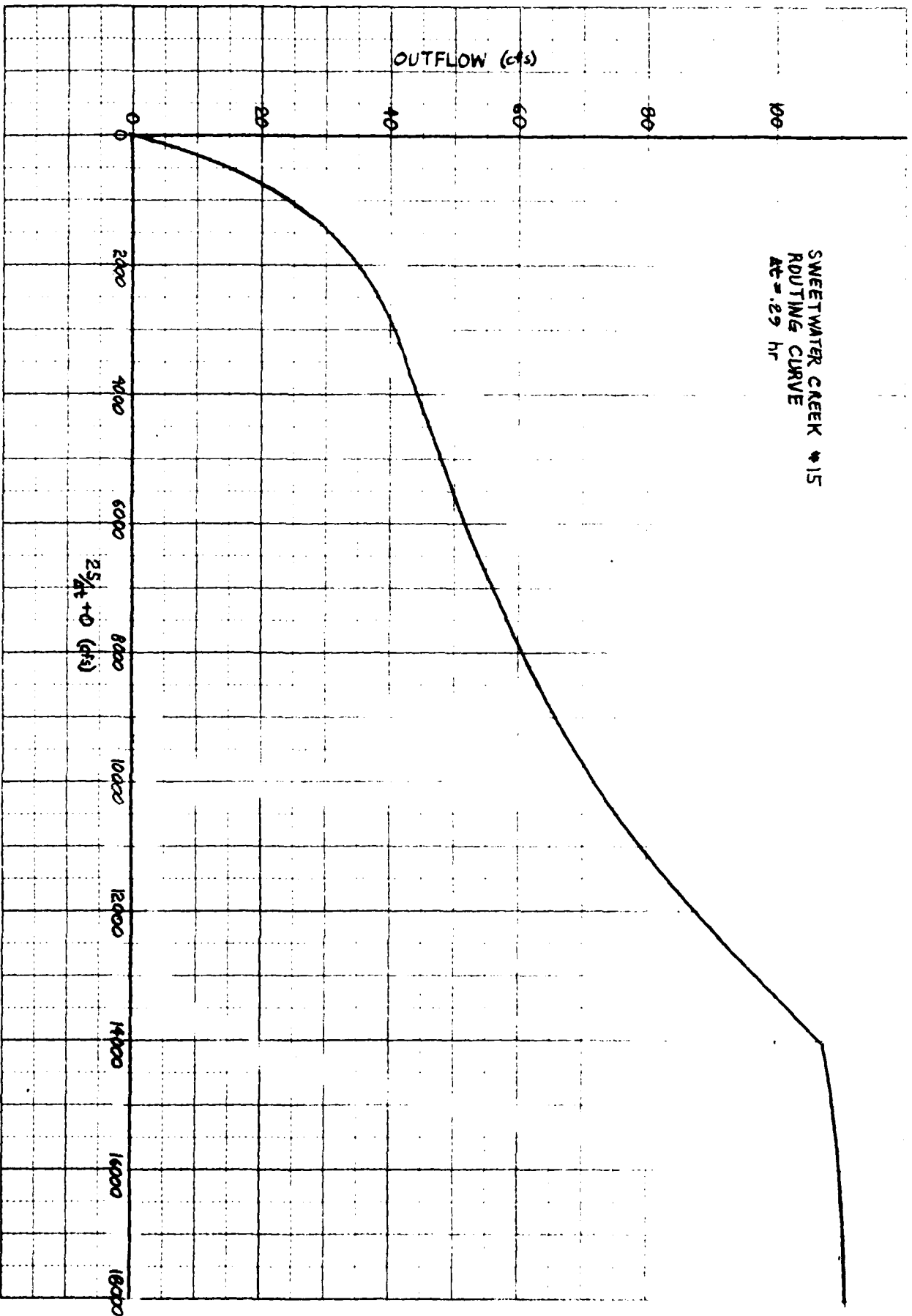
4 JUN 64

ELEVATION FL MSL	STORAGE ACRE FEET	STORAGE DSP	$S/\Delta t$.29 hr	OUTFLOW cfs	$2S/\Delta t$ TO cfs
965	0	0	0	0	0
968	16.1	8.12	666	29.1	1361
970	411	20.72	1700	42.6	3443
974	98.1	49.46	4058	61.3	8177
978	1681	84.75	6954	107.5	14015
980	208	104.87	8604	110.9	17319
981	230.9	116.41	9552	112.4	19216
981.5	241.0	121.50	9969	2291	20168
982.0	255.0	128.56	10549	497.7	21595



SWEETWATER CREEK DAM #15
ROUTING CURVE
 $\Delta t = .29$ HR





PRINCIPAL SPILLWAY HYDROGRAPH ROUTING FORMER DATA SHEET NO. 1

ADP Unit
Fort Worth, Texas
Trial Form

CONTROL WORDS		SITE <i>Dam No. 15-100 Year</i>		STRUCTURE CLASS <i>0.</i>		CARD NUMBER
TITLE1		STATE <i>Tennessee</i>		DATE <i>6-26-74</i>		23.
TITLE2		W/S <i>Sweetwater Creek</i>				24.

HYDRO	CURVE NUMBER	IC OR W/S LENGTH IN FT.	W/S ELEV. DIFF. S(-Z)	AREAL 1-DAY	RAINFALL 10-DAY	DRAINAGE AREA SQ. MI.	CARD NUMBER
	72.	720	1/	6.0	13.0	1.57	25.

PS INFO	BASE FLOW 2/	INVERT ELEV. ON TAILWATER (-)	LOW STAGE CREST ELEV.	CONDUIT LENGTH (FT.)	MANNINGS "N"	SUM COEF. EXCEPT KP	CARD NUMBER
	726	45.	765.0	288.	0.012	2.0	26.

GENERAL	ROUTING CODE 3/	PLOTTING CODE 4/	VELOCITY FT./SEC.	LENGTH IN FEET	COEF. "C"	STREAM CODE 5/	CARD NUMBER
	0.	0.				0.	27.

LOW WEIR	WIDTH FT. 6/	HEIGHT FT.	WIDTH FT.	HEIGHT FT.	WIDTH FT.	HEIGHT FT.	CARD NUMBER
			1.83	2.25	1.83	2.5	28.

HIGH WEIR	CREST ELEVATION	WIDTH FT.	HEIGHT FT.	CREST ELEVATION	WIDTH FT.	HEIGHT FT.	CARD NUMBER
	74.00	12.	1.0	73.7	15.	1.25	29.

CRKST	CREST ELEVATION	WIDTH FT.	HEIGHT FT.	CREST ELEVATION	WIDTH FT.	HEIGHT FT.	CARD NUMBER
	776.7	15.	1.25				30.

CONDUIT	CONDUIT DIAMETER (INCHES) OR WIDTH & HEIGHT (FEET)						CARD NUMBER
	DIA-WIDTH	HEIGHT	DIA-WIDTH	HEIGHT	DIA-WIDTH	HEIGHT	31.

FOOTNOTES ON BACK

**ADP Unit
Fort Worth, Texas
Trial Form**

PRINCIPAL SPILLWAY HYDROGRAPH ROUTING
INPUT DATA SHEET NO. 2

WATERSHED Sweetwater #15 DATE 6-26-74

ELEVATION 1/ FEET		STORAGE ACRE FEET	DISCHARGE CFS 2/ CFS 2/	DISCHARGE CFS 2/ CFS 2/	DISCHARGE CFS 2/ CFS 2/	CARD NUMBER
STAGE-CFS	965.0	107.9	0.	0.	0.	32.
STAGE-CFS	966.7	108.				33.
STAGE-CFS	968.	129.0				34.
STAGE-CFS	970.	149.				35.
STAGE-CFS	972.	157				36.
STAGE-CFS	974.	206.				37.
STAGE-CFS	976.	238.5				38.
STAGE-CFS	978.	250.				39.
STAGE-CFS	980.	276.				40.
STAGE-CFS	982.	314.1				41.
STAGE-CFS	984.	362.				42.
STAGE-CFS	986.	410.9				43.
STAGE-CFS						
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S/M 65

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FOOTNOTES ON THE BACK

HYDRO 72.00 0.79 0.00 6.80 13.00 1.57

PS INFO 7,260 945,000 965,000 288,000 0.012 2,000

GENERAL 0.0 0.0 0.000 0.0 0.000 0.0

LOW WEIR 0.00 0.00 1.83 2.25 1.83 2.50

HIGH WEIR 965.00 12.00 1.00 976.70 15.00 1.25
 976.70 15.00 1.25

CONDUIT 24. 30. 30.

STAGE-CFS 965.00 107.90 0.00 0.00 0.00

STAGE-CFS 966.70 108.00 0.00 0.00 0.00

STAGE-CFS 968.00 124.00 0.00 0.00 0.00

STAGE-CFS 970.00 149.00 0.00 0.00 0.00

STAGE-CFS 972.00 175.70 0.00 0.00 0.00

STAGE-CFS 974.00 206.00 0.00 0.00 0.00

STAGE-CFS 976.00 238.50 0.00 0.00 0.00

STAGE-CFS 976.70 250.00 0.00 0.00 0.00

STAGE-CFS 978.00 276.00 0.00 0.00 0.00

STAGE-CFS 980.00 316.10 0.00 0.00 0.00

STAGE-CFS 982.00 362.00 0.00 0.00 0.00

STAGE-CFS 984.00 411.40 0.00 0.00 0.00

END TABLE

PRINCIPAL SPILLWAY HYDROGRAPH ROUTING INPUT DATA SHEET NO. 1

Area Unit
Fort Worth, Texas
Print Form

FILE1	SITE DEM NO 15	50 YEAR	STRUCTURE CLASS	6.	CARD NUMBER	1.
FILE2	W/S Sweetwater Creek	STATE Tennessee	DATE	7-26-74		2.

AREA	CLER	TO OR	W/S ELEV. DIFF	AREAL	RAINFALL	DRAINAGE	CARD NUMBER
72.	MON. CR	L. GTH IN FT.	S(-2) 1/	1-DAY	10-DAY	AREA SQ. MI.	
				6.5	11.8	1.57	3.

PS INFO	BASE FLOW 2/	INVERT ELEV	LOW STAGE	CONDUIT	MANNINGS	SUM COEF.	CARD NUMBER
	CHARGE LOSS(-)	OR TAILWATER (-)	CREST ELEV.	LENGTH (FT.)	"N"	EXCEPT KP	
	7.26	945.	965.0	288.	0.012	2.0	4.

ROUTING	CODE 3/	PLOTTING	VELOCITY	LENGTH	COEF.	STREAM	CARD NUMBER
	0.	CODE 4/	FT./SEC.	IN FEET	"C"	CODE 5/	
						0.	5.

LOW WEIR	WIDTH	HEIGHT	WIDTH	HEIGHT	WIDTH	HEIGHT	CARD NUMBER
	FT. 6/	FT.	FT.	FT.	FT.	FT.	
			1.83	2.25	1.83	2.5	6.

HIGH WEIR	CREST	WIDTH	HEIGHT	CREST	WIDTH	HEIGHT	CARD NUMBER
	ELEVATION	FT.	FT.	ELEVATION	FT.	FT.	
	776.7	12.	1.0	971.7	15.	1.25	7.

	CREST	WIDTH	HEIGHT				CARD NUMBER
	ELEVATION	FT.	FT.				
	776.7	15.	2.25				8.

CONDUIT	CONDUIT DIAMETER(INCHES) OR WIDTH & HEIGHT(Feet)						CARD NUMBER
	DIA-WIDTH	HEIGHT	DIA-WIDTH	HEIGHT	DIA-WIDTH	HEIGHT	
	24.		30.		30.		9.

FOOTNOTES ON BACK

**ADP Unit
Fort Worth, Texas
Trial Form**

DATE 7-26-74

WATERSHED Sweetwater #15

[illegible]

FOOTNOTES ON THE BACK

DAM NO. 15 - 100 YEAR SWEETWATER CREEK TENNESSEE

ELEVATION	STRUCTURE CLASS B 08-01-74	DISCHARGE
965.00	STORAGE	0.00
966.00	107.90	5.67
968.00	107.95	29.12
969.99	123.99	42.63
971.99	148.99	52.79
973.99	175.69	61.29
976.70	205.99	71.18
977.20	250.00	89.30
977.49	259.99	106.59
978.00	265.93	107.45
978.99	276.00	109.12
979.99	295.97	110.77
980.98	315.94	112.39
981.98	338.78	113.99
982.98	361.65	115.57
983.97	386.23	117.13
984.97	410.83	118.67
985.96	435.44	120.18
986.96	460.05	121.68
987.96	484.65	123.16
988.95	509.26	124.62
989.95	533.87	126.07
990.95	558.47	127.50
991.94	583.08	128.91
992.94	607.69	130.31
993.93	632.29	131.69
	656.90	

574
102
10

TIME	INFLOW	AVE IN	OUTFLOW	ELEV.	STORAGE
6.00	18.51	18.49	12.01	966.54	112.29
12.00	18.80	18.78	15.45	966.83	114.64
18.00	19.13	19.10	17.27	966.98	115.89
24.00	19.49	19.46	18.33	967.07	116.61
30.00	19.89	19.85	19.04	967.14	117.10
36.00	20.34	20.30	19.60	967.18	117.48
42.00	20.84	20.80	20.13	967.23	117.84
48.00	21.43	21.37	20.66	967.27	118.21
54.00	22.10	22.04	21.24	967.32	118.61
60.00	22.89	22.81	21.91	967.38	119.06
66.00	23.82	23.74	22.67	967.45	119.58
72.00	24.96	24.86	23.59	967.52	120.21
78.00	26.38	26.25	24.69	967.62	120.96
84.00	28.19	28.02	26.06	967.73	121.90
90.00	30.62	30.39	27.83	967.88	123.11
96.00	34.07	33.73	29.56	968.06	124.81
102.00	39.42	38.87	31.23	968.31	127.89
108.00	49.07	48.01	34.21	968.75	133.41
114.00	73.34	70.14	40.15	969.63	144.39
120.00	1458.60	835.19	68.29	975.91	237.14
124.00	107.96	122.27	112.41	980.99	339.01
MAXIMUM STORAGE OBTAINED. DRAW-DOWN BEGINS.					
1.00	11.39	11.39	58.28	973.29	195.25
2.00	11.39	11.39	31.67	968.37	128.70
3.00	11.39	11.39	12.79	966.60	112.82
4.00	11.39	11.39	11.47	966.49	111.92
5.00	11.39	11.39	11.40	966.48	111.87
6.00	11.39	11.39	11.39	966.48	111.87
7.00	11.39	11.39	11.39	966.48	111.87
7.41	11.39	11.39	11.39	966.48	111.87
OUTFLOW = INFLOW-ROUTING COMPLETE					

MAXIMUM STORAGE IS 339.0 ACRE FEET (4.048 INCHES) AT ELEV. 980.99 (CREST, EMER. SPW.).

NET DETENTION STORAGE REQUIRED IS 231.2 ACRE FEET (2.761 INCHES).

GROSS STORAGE REMAINING AFTER 10 DAYS IS 111.8 ACRE FEET (1.336 INCHES)
AT ELEV. 966.48 (START EMER. SPW. AND FREEBOARD ROUTINGS).

NET REMAINING STORAGE IS 4.0 ACRE FEET (0.048 INCHES).

PRINCIPAL SPILLWAY ROUTING SUMMARY

PAGE NO. 17

DAM NO. 15 - 50 YEAR SWEETWATER CREEK TENNESSEE
STRUCTURE CLASS B
08-01-74

WATER TER	MAXIMUM		NET DETENTION		GROSS REMAINING		NET REMAINING	
	ELEV.	STORAGE	INCHES	STORAGE	ELEV.	STORAGE	INCHES	STORAGE
24.	979.71	310.3	3.706	202.5	965.00	107.8	1.287	0.0
30.	980.54	328.4	3.923	220.6	966.53	112.2	1.340	4.4
30.	980.36	324.5	3.876	216.7	966.48	111.8	1.336	4.0

DAM NO. 15 - 100 YEAR SWEETWATER CREEK TENNESSEE
STRUCTURE CLASS B
08-01-74

WATER TER	MAXIMUM		NET DETENTION		GROSS REMAINING		NET REMAINING	
	ELEV.	STORAGE	INCHES	STORAGE	ELEV.	STORAGE	INCHES	STORAGE
24.	980.38	325.1	3.883	217.3	965.00	107.8	1.287	0.0
30.	981.22	344.1	4.109	236.3	966.53	112.2	1.340	4.4
30.	980.99	339.0	4.048	231.2	966.48	111.8	1.336	4.0

ADD Unit
 Fort Worth, Texas
 COUNTY OF TARRANT HYDROGRAPHIC DESIGN

Page 1 of 1

Dam No. 15, Sweetwater Creek W/S
Monroe County, Tennessee

STRUCTURE CLASS **6** DATE **8/8/74**

CARD ID. **1.**

CARD ID. **2.**

CARD ID. **3.**

CARD ID. **4.**

CARD ID. **5.**

STAGE-CFS	ELEVATION	STORAGE AC. FT.	Q, cfs No. 1	Q, cfs No. 2	Q, cfs No. 3	CARD ID.
81	965.00	111.8	0.	0.	0.	6.
82	966.48	111.9	11.	11.	11.	7.
83	968.	124.	29.	29.	27.	8.
84	972.	175.7	53.	53.	53.	9.
85	976.7	250.	71.	71.	71.	10.
86	977.49	265.93	102.	107.	107.	11.
87	978.	276.	108.	108.	108.	12.
88	980.	316.1	111.	111.	111.	13.
89	981.0	338.8	112.	112.	112.	14.
90	981.5	348.	113.	113.	113.	15.
91	982.0	362.	114.	114.	114.	16.
92	982.5	373.	115.	115.	115.	17.
93	983.0	386.3	116.	116.	116.	18.
94	984.0	411.4	117.	117.	117.	19.
95	985.96	460.05	120.	120.	120.	20.
96	987.96	509.26	123.	123.	123.	21.
97	988.95	533.87	125.	125.	125.	22.
98						23.
99						24.

KEYWORD NOTE: Uniform 10 column fields. Punch dec. and control words.

FREEBOARD UNCONTROLLED AREA HYDROGRAPH.

RUNOFF = 24.70 IN., VOL. = 2068. AC.FT.

TIME +	0.00	0.25	0.50	0.75	1.00	1.25	1.50	1.75
+ + + + +	+ + + + +	+ + + + +	+ + + + +	+ + + + +	+ + + + +	+ + + + +	+ + + + +	+ + + + +
0.00 +	0.00	0.00	1.56	43.90	219.03	566.90	1114.35	1796.35
2.00 +	2841.24	5273.36	9804.22	13118.75	12166.48	9234.99	7088.27	5641.35
4.00 +	4663.92	3947.94	3479.24	3228.42	2882.89	2654.15	2483.22	2228.15
6.00 +	2091.83	1965.21	1379.19	746.67	380.82	189.78	92.45	42.83
8.00 +	19.01	6.40	0.75					

FREEBOARD ROUTING BOTTOM WIDTH= 200.0 ENTRANCE LENGTH= 400.0

TIME	INFLOW	AVE INFLOW	OUTFLOW	STORAGE	ELEVATION	V/C (ES 3 ONLY)
0.25	0.00	0.00	0.00	111.80	965.00	
0.50	1.56	0.78	0.83	111.80	965.11	
0.75	43.90	22.73	11.37	112.15	966.51	
1.00	219.03	131.46	15.00	114.59	966.81	
1.25	566.90	392.96	26.44	122.28	967.78	
1.50	1114.35	840.62	35.96	139.00	969.16	
1.75	1796.33	1455.34	49.51	168.19	971.41	
2.00	2841.24	2318.79	62.50	214.94	974.48	
2.25	5273.36	4057.30	109.57	296.98	979.04	
2.50	9804.22	7538.79	3153.18	419.03	984.30	7.79
2.75	13118.75	11461.49	10690.58	512.82	988.10	11.67
3.00	12166.48	12642.62	12711.74	532.27	988.88	12.34
3.25	9234.99	10700.73	10629.52	512.23	988.08	11.65
7.25	189.78	285.30	570.31	364.03	982.09	4.17

VOLUME CHECK AT HP= 1.06. COMPUTED HP= 7.88 AT ELEV. 988.88 (STORAGE IS 532.2 AC.FT.= 6.35 IN.)
TIME= 3.00 HOURS CRITICAL VELOCITY= 12.34 CRITICAL DEPTH= 4.74 CRITICAL SLOPE= 1.38.

IN INFLOW = 13118. CFS
 AL VOL. THRU EMER SPILLWAY = 1800. AC-FT.
 ENDING VOL. THRU EMER SPILLWAY = 541. AC-FT.
 K OUTFLOW = 12711. CFS
 ACK = 9.004 AC-FT PER FT. WIDTH
 DURATION OF FLOW= 6.00

TITLE DAM NO. 15, SWEETWATER CREEK W/S PAGE NO. 1
 TITLE MCNROE COUNTY, TENNESSEE STRUCTURE CLASS B 08-14-74

HYDRO CURVE= 72. TC= 0.79 DURATION= 6.00 ES RAIN= 8.00 FB RAIN=28.90 AREA= 1.57

SPILLWAY CREST= 981.0 CASE= 2. PRINT OPTION=2. SIDE SLOPES= 3.000 EXIT CHANNEL SLOPE = 0.00

GENERAL ROUTE=0. PLOT CODE=0. VELOCITY= 0.00 LENGTH= 0. 'C'=0.000 CODE=0.

SPW.SIZE 1ST 80= 200., E. LENGTH= 400. 2ND 80= 250., E. LENGTH= 400. 3RD 80= 300., E. LENGTH= 400.

STAGE-CFS	ELEV= 965.00	STORAGE= 111.8	1ST DISCH= 0.	2ND DISCH= 0.	3RD DISCH= 0.
STAGE-CFS	ELEV= 966.48	STORAGE= 111.9	1ST DISCH= 11.	2ND DISCH= 11.	3RD DISCH= 11.
STAGE-CFS	ELEV= 968.00	STORAGE= 124.0	1ST DISCH= 29.	2ND DISCH= 29.	3RD DISCH= 29.
STAGE-CFS	ELEV= 972.00	STORAGE= 175.7	1ST DISCH= 53.	2ND DISCH= 53.	3RD DISCH= 53.
STAGE-CFS	ELEV= 976.70	STORAGE= 250.0	1ST DISCH= 71.	2ND DISCH= 71.	3RD DISCH= 71.
STAGE-CFS	ELEV= 977.49	STORAGE= 265.9	1ST DISCH= 107.	2ND DISCH= 107.	3RD DISCH= 107.
STAGE-CFS	ELEV= 978.00	STORAGE= 276.0	1ST DISCH= 108.	2ND DISCH= 108.	3RD DISCH= 108.
STAGE-CFS	ELEV= 980.00	STORAGE= 316.1	1ST DISCH= 111.	2ND DISCH= 111.	3RD DISCH= 111.
STAGE-CFS	ELEV= 981.00	STORAGE= 336.8	1ST DISCH= 112.	2ND DISCH= 112.	3RD DISCH= 112.
STAGE-CFS	ELEV= 981.50	STORAGE= 348.0	1ST DISCH= 113.	2ND DISCH= 113.	3RD DISCH= 113.
STAGE-CFS	ELEV= 982.00	STORAGE= 362.0	1ST DISCH= 114.	2ND DISCH= 114.	3RD DISCH= 114.
STAGE-CFS	ELEV= 982.50	STORAGE= 373.0	1ST DISCH= 115.	2ND DISCH= 115.	3RD DISCH= 115.
STAGE-CFS	ELEV= 983.00	STORAGE= 386.3	1ST DISCH= 116.	2ND DISCH= 116.	3RD DISCH= 116.
STAGE-CFS	ELEV= 984.00	STORAGE= 411.4	1ST DISCH= 117.	2ND DISCH= 117.	3RD DISCH= 117.
STAGE-CFS	ELEV= 985.96	STORAGE= 460.0	1ST DISCH= 120.	2ND DISCH= 120.	3RD DISCH= 120.
STAGE-CFS	ELEV= 987.96	STORAGE= 509.2	1ST DISCH= 123.	2ND DISCH= 123.	3RD DISCH= 123.
STAGE-CFS	ELEV= 988.95	STORAGE= 533.8	1ST DISCH= 125.	2ND DISCH= 125.	3RD DISCH= 125.

COMPUTED DISCHARGE FOR CASE 2.

ELEV= 965.00	STORAGE=	111.8	1ST DISCH=	0.0	2ND DISCH=	0.0	3RD DISCH=	0.0
ELEV= 966.48	STORAGE=	111.9	1ST DISCH=	11.0	2ND DISCH=	11.0	3RD DISCH=	11.0
ELEV= 968.00	STORAGE=	124.0	1ST DISCH=	29.0	2ND DISCH=	29.0	3RD DISCH=	29.0
ELEV= 972.00	STORAGE=	175.7	1ST DISCH=	53.0	2ND DISCH=	53.0	3RD DISCH=	53.0
ELEV= 976.70	STORAGE=	250.0	1ST DISCH=	71.0	2ND DISCH=	71.0	3RD DISCH=	71.0
ELEV= 977.49	STORAGE=	265.9	1ST DISCH=	107.0	2ND DISCH=	107.0	3RD DISCH=	107.0
ELEV= 978.00	STORAGE=	276.0	1ST DISCH=	108.0	2ND DISCH=	108.0	3RD DISCH=	108.0
ELEV= 980.00	STORAGE=	316.1	1ST DISCH=	111.0	2ND DISCH=	111.0	3RD DISCH=	111.0
ELEV= 981.00	STORAGE=	338.8	1ST DISCH=	112.0	2ND DISCH=	112.0	3RD DISCH=	112.0
ELEV= 981.50	STORAGE=	348.0	1ST DISCH=	229.1	2ND DISCH=	258.0	3RD DISCH=	286.9
ELEV= 982.00	STORAGE=	362.0	1ST DISCH=	497.7	2ND DISCH=	592.8	3RD DISCH=	687.8
ELEV= 982.50	STORAGE=	373.0	1ST DISCH=	886.4	2ND DISCH=	1076.4	3RD DISCH=	1266.4
ELEV= 983.00	STORAGE=	386.3	1ST DISCH=	1360.8	2ND DISCH=	1690.8	3RD DISCH=	2000.8
ELEV= 984.00	STORAGE=	411.4	1ST DISCH=	2630.2	2ND DISCH=	3240.2	3RD DISCH=	3850.1
ELEV= 985.96	STORAGE=	460.0	1ST DISCH=	5955.3	2ND DISCH=	7345.2	3RD DISCH=	8735.1
ELEV= 987.96	STORAGE=	509.2	1ST DISCH=	10318.0	2ND DISCH=	12700.9	3RD DISCH=	15083.8
ELEV= 988.15	STORAGE=	533.8	1ST DISCH=	12875.2	2ND DISCH=	15928.0	3RD DISCH=	18780.8

EMER. SPW. UNCONTROLLED AREA HYDROGRAPH.

RUNOFF = 4.69 IN., VOL. = 393. AC.FT.

TIME +	0.00	0.25	0.50	0.75	1.00	1.25	1.50	1.75
+ + + + +	+ + + + +	+ + + + +	+ + + + +	+ + + + +	+ + + + +	+ + + + +	+ + + + +	+ + + + +
0.00 +	0.00	0.00	0.00	0.00	0.00	0.27	7.10	50.01
2.00 +	180.31	584.32	1484.12	2321.46	2340.20	1869.86	1497.33	1234.18
4.00 +	1049.54	907.60	813.90	765.66	689.59	638.94	600.94	541.50
6.00 +	510.50	481.22	338.24	183.19	93.46	46.58	22.70	10.52
8.00 +	4.67	1.57	0.18					

EMER.SPW. ROUTING BOTTOM WIDTH= 200.0 ENTRANCE LENGTH= 400.0

TIME	INFLOW	AVE INFLOW	OUTFLOW	STORAGE	ELEVATION	V/C (ES Q ONLY)
0.25	0.00	0.00	0.00	111.80	965.00	
0.50	0.00	0.00	0.00	111.80	965.00	
0.75	0.00	0.00	0.00	111.80	965.00	
1.00	0.00	0.00	0.00	111.80	965.00	
1.25	0.27	0.13	0.14	111.80	965.01	
1.50	7.10	3.68	3.91	111.83	965.52	
1.75	50.01	28.56	11.54	112.26	966.52	
2.00	180.31	115.16	14.68	114.37	966.79	
2.25	584.32	382.31	25.80	121.85	967.73	
2.50	1484.12	1034.22	37.61	142.56	969.43	
2.75	2321.46	1902.79	54.26	180.92	972.33	
3.00	2340.20	2330.83	65.63	227.84	975.29	
3.25	1869.86	2105.03	107.36	269.54	977.67	
3.50	1497.33	1683.59	109.95	302.08	979.30	
3.75	1234.18	1365.75	111.52	328.01	980.52	
4.00	1049.54	1141.86	230.74	348.07	981.50	2.66
4.25	907.60	978.57	478.20	360.96	981.96	3.87
4.50	813.90	860.75	670.69	366.87	982.22	4.45
4.75	765.66	789.78	734.37	368.68	982.30	4.62
5.00	689.59	727.62	730.76	368.58	982.29	4.61

VOLUME CHECK AT HP= 0.08. COMPUTED HP= 1.30 AT ELEV. 982.30 (STORAGE IS 368.6 AC.FT.= 4.40 IN.)
TIME= 4.75 HOURS CRITICAL VELOCITY= 4.62 CRITICAL DEPTH= 0.66 CRITICAL SLOPE= 2.67.

PEAK INFLOW = 2340. CFS
TOTAL VOL. THRU EMER SPILLWAY = 120. AC-FT.
DISCHARGING VOL. THRU EMER SPILLWAY = 34. AC-FT.
PEAK OUTFLOW = 734. CFS
ATTACK = 0.604 AC-FT PER FT. WIDTH DURATION OF FLOW= 4.00

SUMMARY - RESERVOIR ROUTING PROGRAM

DAM NO. 15, SWEETWATER CREEK W/S
MONROE COUNTY, TENNESSEE

STRUCTURE CLASS B 08

TYPE	BO	L	ELEV.	HP	STORAGE	Q-TOTAL	Q-EM.SP	V
FSH	200.	400.	982.30	1.30	368.6	734.3	619.7	4.
	250.	400.	982.17	1.17	365.7	760.0	645.7	4.
	300.	400.	982.07	1.07	363.6	772.7	658.5	4.
H	200.	400.	988.88	7.88	532.2	12711.7	12586.8	12.
	250.	400.	987.96	6.96	509.3	12715.9	12592.9	11.
	300.	400.	987.22	6.22	491.0	12741.3	12619.4	10.

NOTE - IN ABOVE SUMMARY VC, DC, AND SC WERE COMPUTED FROM (Q-EM.SP) PER FOOT USIN

RESERVOIR ROUTING PROGRAM

CREEK W/S

EE STRUCTURE CLASS B 08-14-74

Q	Q-TOTAL	Q-EM.SP	V/C	D/C	S/C	S/C.25	OUR-HR
6	734.3	619.7	4.62	0.66	2.67	3.63	4.00
7	760.0	645.7	4.35	0.58	2.77	3.78	3.75
6	772.7	658.5	4.12	0.52	2.87	3.91	3.50
2	12711.7	12586.8	12.34	4.74	1.38	1.88	6.00
3	12715.9	12592.9	11.54	4.14	1.44	1.97	5.75
0	12741.3	12619.4	10.92	3.70	1.50	2.04	5.75

D FROM (Q-EM.SP) PER FOOT USING FORMULAS IN T.R.-2 AND T.R.-39.

APPENDIX E
CHECKLIST AND DESIGN PLANS

Check List
Visual Inspection of Earth Dams
Department of Conservation
Division of Water Resources

Name of Dam Sweetwater Creek Dam #15 (Sherman F. Owen Lake)
County Monroe Date of Inspection 5/19/81
ID # - State 62-7014 Federal TN-12314
Type of Dam Earth
Hazard Category-Federal High State 1
Weather Cloudy, light rain Temperature 65°F
Pool at Time of Inspection about 30' (distance from crest)
Tailwater at Time of Inspection 0 (distance from stream bed)
Design/As Built Drawings Available: Yes X No
Location: SCS
Copy Obtained: Yes X No
Reviewed: Yes X No
Construction History Available: Yes No
Location:
Copy Obtained: Yes No
Reviewed: Yes No
Other Records and Reports Available: Yes No
Location:
Copy Obtained: Yes No
Reviewed: Yes No
Prior Incidents or Failures: Yes X No
Inspection Personnel and Affiliation:
Troy Wedekind - TDWR
Ed O'Neill - TDWR
George Moore - TDWR

I. Embankment

A. Crest

Description (1st inspection) Roadway across top
of dam.

1. Longitudinal Alignment Straight

2. Longitudinal Surface Cracks None

3. Transverse Surface Cracks None

4. General Condition of Surface Good

5. Miscellaneous Berm roadway o.k.

B. Upstream Slope

1. Undesirable Growth or Debris Good grass cover

2. Sloughing, Subsidence, or Depressions None

3. Slope Protection Vegetation only on upper 1/2; none
on lower half

a. Condition of Riprap None

b. Durability of Individual Stones N/A

c. Adequacy of Slope Protection Against Waves
and Runoff O.K.

d. Gradation of Slope Protection - Localized Areas
of Fine Material N/A

4. Surface Cracks None seen

C. Downstream Slope

1. Undesirable Growth or Debris Good grass cover

2. Sloughing, Subsidence, or Depressions; Abnormal

Bulges or Non-Uniformity None seen

3. Surface Cracks on Face of Slope None seen

4. Surface Cracks or Evidence of Heaving at

Embankment Toe None seen

5. Wet or Saturated Areas or Other Evidence of Seepage
on Face of Slope; Evidence of "Piping" or "Boils"

None seen

6. Drainage System O.K.

7. Fill Contact with Outlet Structure Good

8. Condition of Grass Slope Protection A few minor

bare spots generally good cover.

D. Abutments

1. Erosion of Contact of Embankment with Abutment from
Surface Water Runoff, Upstream or Downstream _____

None seen

2. Springs or Indications of Seepage Along Contact of
Embankment with the Abutments _____ None seen

3. Springs or Indications of Seepage in Areas a Short
Distance Downstream of Embankment - Abutment Tie-in

None seen

II. Area Downstream of Embankment, Including Channel

A. Localized Subsidence, Depressions, Sinkholes, Etc. _____

None seen

B. Evidence of "Piping", "Boils", or "Seepage" _____

None seen

C. Unusual Presence of Lush Growth, such as Swamp
Grass, etc. None seen

D. Unusual Muddy Water in Downstream Channel None seen

E. Sloughing or Erosion None seen

F. Surface Cracks or Evidence of Heaving Beyond
Embankment Toe None seen

G. Stability of Channel Sideslopes Good; channel
apparently has little use.

H. Condition of Channel Slope Protection Good

I. Adequacy of Slope Protection Against Waves, Currents,
and Surface Runoff Good

J. Miscellaneous SCS standard impact basin.

K. Condition of Relief Wells, Drains, and Other
Appurtenances Wingwall drains good condition.

L. Unusual Increase or Decrease in Discharge from
Relief Wells N/A

III. Instrumentation

- A. Monumentation/Surveys Information plaque

- B. Observation Wells None

- C. Weirs None

- D. Piezometers None

- E. Other None

IV. Spillways

A. Service Spillway (Service/Emergency Combination Yes No X)

1. Intake Structure Condition Good

2. Outlet Structure Condition Good

3. Pipe Condition Good; observed from D/S end.

4. Evidence of Leakage or Piping None seen

5. General Remarks _____

B. Emergency Spillway

1. General Condition Good

2. Entrance Channel Fence and roadway cross channel.

3. Control Section Good

3. Exit Channel _____ Good _____

4. Vegetative/Woody Cover _____ Good _____

5. Other Observations _____

V. Emergency Drawdown Facilities (if part of service spillway
so state) Slide gate at base of service spillway riser.

Are Facilities Operable: Yes _____ No _____ Unknown

Were Facilities Operated During Inspection: Yes _____ No X

Date Facilities Were Last Used Unknown

VI. Reservoir

A. Slopes O.K.

B. Sedimentation Minor

C. Turbidity High

VII. Drainage Area

Description (for hydrologic analysis) 20% woods,

80% pasture

A. Changes in Land Use None known

Reservoir has never filled apparently due to an open solution channel in the underlaying dolomite. Highest known lake level is about 1 foot below low stage orifice after a 5.2 inch rain as per SCS.

VIII. Downstream Area (Stream)

A. Condition (obstructions, debris, etc.) Good; no
obstruction

B. Slopes Good

C. Approximate No. Homes, Population, and Distance D/S

D. Other Hazards

IX. Miscellaneous

Incidents/Failures Lake will not fill. Outflow could not
be found below dam.

Observed Geology of Area Karstic area; Newalla formation

X. Conclusions

Dam appears stable.

XI. Recommendations

Check with SCS about reservoir leak.

Emergency action plan.

Periodic inspection and maintenance schedule.

Regional Engineer

Chief Engineer

ANNUAL MAINTENANCE INSPECTIONS - FLOODWATER RETARDING STRUCTURES

WATERSHED Sweetwater Creek, SITE NO. 15

LOCATION Sweetwater, TN. 37874 INSPECTION DATE 1-28-81

A. EMBANKMENT

1. Type and condition of vegetation tall fescue, crown vetch; fair
2. Is woody growth present? no
3. Are cracks present? no
4. Has sliding occurred? no
5. Are irregularities caused by settlement evident? minor irregularities
in both front and back berm.
6. Are eroded areas or gullies present? no
7. Is toe or area below dam wet? none presently; but pool area is dry
8. Are concentrated leaks present? no
9. If wetness or leaks are present, explain changes since last inspection N/A
10. Are sinks present in vicinity of dam? two(2) sunken holes at waterfall
approx 3-4' deep, one light blue
11. Condition of berm and areas subject to wave erosion no
12. Is dispersion (jugging) evident? no
13. Floating debris from reservoir no

B. PRINCIPAL SPILLWAY

1. Condition of trash racks Very good-No evidence of any problems
2. Debris lodged in openings No
3. Indications of cracks in riser or conduit no

4. Condition of concrete (riser, bent & impact basin) Good

5. Is manhole cover in place? yes

6. Condition of gates good

C. STILLING BASIN AND OUTLET CHANNEL

1. Type and condition of vegetation tall fescue; dense veg growth

2. Is stilling basin eroding? no

3. Are banks of outlet channel stable? yes

4. Is outlet channel degrading? no

5. Is channel free of obstructions? yes

6. Boils in stilling basin or outlet channel? no

7. If boils are present, is there an accumulation of soil or sand around
boil? N/A

8. If leakage is evident, is it clear? N/A

9. Condition of riprap needs repair-excess surface water from dry sink
been has eroded the riprap in two (2) locations

D. FOUNDATION DRAIN

1. Iron oxide deposits on pipe? no

2. Other blockages in pipe? no

3. Condition of animal guards good

4. Flow from pipe (none, trickle, moderate or strong) none

5. Sand or silt in discharge? no

E. EMERGENCY SPILLWAY

1. Type and condition of vegetation Tall fescue and clover; excellent

2. Erosion? none

3. Do roads cross or go through spillway which will concentrate flow or contribute to erosion? Mr. Browder has fenced a cattle lane across the top of the dam & through the spillway; see attachment

4. Are fences present which will obstruct flow? yes; see attachment

5. Has spillway been altered? no

6. Woody growth that could obstruct flow? no

F. BORROW AREA

1. Type and condition of vegetation No borrow area at this site

2. Erosion? N/A

G. RESERVOIR

1. Shoreline wave erosion? no

2. Woody growth? no

3. Floating debris? no

4. Sinks or holes? see A. 10

H. FENCES

1. Condition of fences good

I. MISCELLANEOUS

1. Has land use in watershed changed enough since structure was designed to alter runoff significantly? No

2. Has land use in the flood plain below the dam changed enough since design to alter hazard classification? no

J. CONCLUSIONS AND RECOMMENDATIONS

Vegetation needs to be fertilized-vegetation on the dry side and wet side beam is small; this may be due in part to the lack of rainfall during the summer and fall of 1980. Fertilize should be applied between March 15 and April 15.
Stilling Basin-Small size riprap (2-3 inches) has washed in two locations

TN-WS-6 (Rev. 1)
(Continued)

around stilling basin; needs to be repaired with larger riprap
(6-9 inches in size).

Inspected by:

Sam H. Thomas
Sponsor Representative

Date:

1-28-81

Inspected by:

James D. Farley DC
SCS Representative

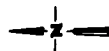
Date:

1-28-81

Name and title of others assisting with inspection:

Willie Neal-- Engineering Specialists

Gail Payne-- Engineering Technican



DAM NO. 15 SWEETWATER CREEK WATERSHED MONROE, LOUDON AND McMINN COUNTIES, TENNESSEE

U.S. DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

COOPERATING WITH

SWEETWATER CREEK WATERSHED DISTRICT

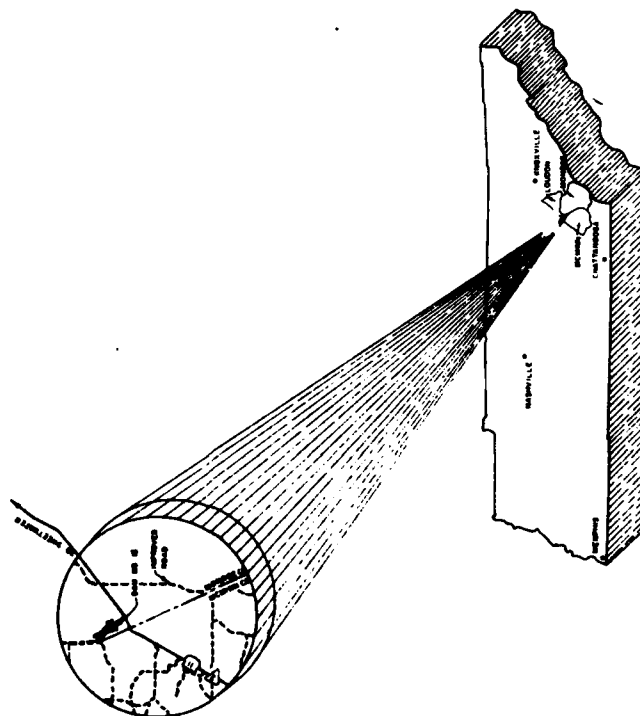
MONROE COUNTY SOIL CONSERVATION DISTRICT

LOUDON COUNTY SOIL CONSERVATION DISTRICT

McMINN COUNTY SOIL CONSERVATION DISTRICT

AND

U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE



INDEX TO DRAWINGS

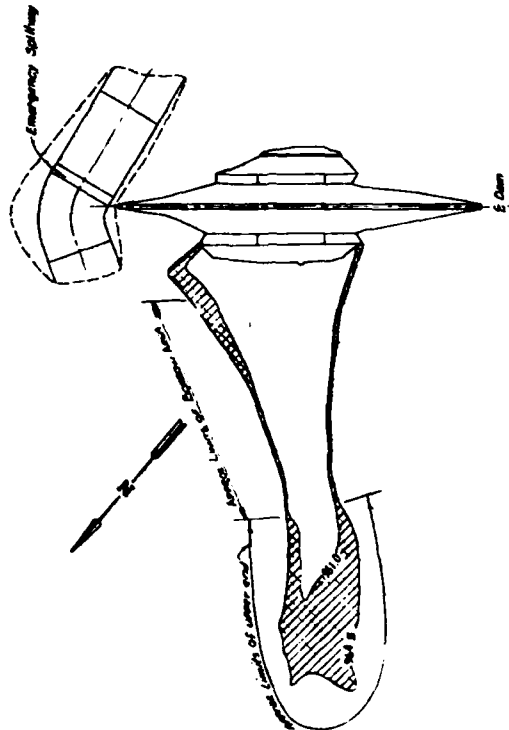
- 1 LOCATION MAP
- 2 REGIONAL AREA MAP
- 3 SUGGESTED ZONE AND GROUND
- 4 PLAN - BORROW AREA
- 5-6 SITE LOCATION MAP
- 7-8 PRINCIPAL SPILLWAY
- 9-10 DAM DETAILS - EMBANKMENT
- 11-12 DAM DETAILS - RAMP
- 13 DETAILS OF TRUSS RACK HEADGATE AND MANHOLE COVER
- 14 DEEP WATER RELEASE DEVICE
- 15 LADDER DETAILS
- 16-17 DETAILS - IMPACT BASIN
- 18 STEEL SCHEDULE - IMPACT BASIN
- 19-20 DETAILS - IMPACT BASIN
- 21-22 IMPACT BASIN CONCRETE DETAILS
- 23 TYPICAL SECTIONS - EMBANKMENT
- 24 PLAN - FOUNDATION TREATMENT
- 25 DETAILS - FOUNDATION TREATMENT
- 26-27 DETAILS - FOUNDATION TREATMENT
- 28-29 DETAILS - FOUNDATION TREATMENT
- 30-31 DETAILS - FOUNDATION TREATMENT
- 32-33 PLAN OF BORROW - FOUNDATION INVESTIGATION
- 34 VALLEY SECTION - 700 (50) 725 FEET UPSTREAM
- 35 VALLEY SECTION - 100 FEET UPSTREAM
- 36 VALLEY SECTION - 50 FEET UPSTREAM
- 37-38 PROFILE & DAM
- 39 VALLEY SECTION - 50 FEET DOWNSTREAM
- 40 VALLEY SECTION - 100 FEET DOWNSTREAM
- 41-42 SECTIONS - DAM
- 43 PROFILE & PRINCIPAL SPILLWAY
- 44 PLAN AND PROFILE - OUTLET CHANNEL
- 45 PROFILE & EMBANKMENT SPILLWAY
- 46 VALLEY SECTION - EMBANKMENT SPILLWAY AREA
- 47-48 BORROW AREA
- 49-50 STRUCTURE MONUMENT
- 51-54 DETAILS - TELEPHONE CABLE PROTECTION
- 1 OF 1

CONSTRUCTION DRAWINGS APPROVED

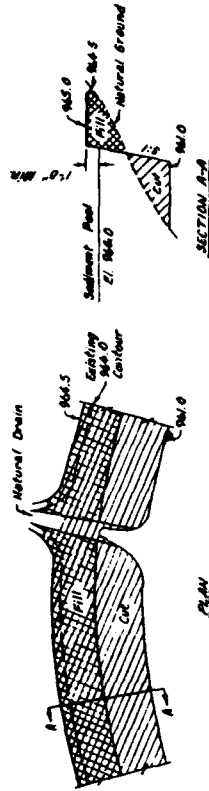
DATE: 6-28-76
 BY: J. W. Adams, Approved by Letter
 TITLE: DAM NO. 15
 PROJECT: SWEETWATER CREEK WATERSHED
 FORT WORTH, TEXAS

Notes:

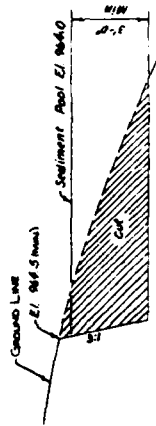
1. The shoreline area between existing ground contour 944.0 and 944.5 shall be shaped and graded so that all cuts shall be to minimum 944.0 or lower and all finished fills shall be to maximum 944.5 or higher. Cuts shall be made at the natural drain, but no cut shall extend outside the existing 944.0 contour.
2. Groutings shall be provided in the fill for drainage. All natural drains shall remain open.
3. The details shown depict different methods of performing the work. The contractor will select the method or methods shown on the plans best adapted to his construction operations and the configuration of the ground.
4. Excavation will not be required in channels when the sediment pool is confined within natural channel banks.
5. SHORELINE SHAPING AND GRADING WITHIN THE DAM AREA SHALL BE DONE IN ACCORDANCE WITH METHOD II. THE LOCATION SHALL BE DETERMINED BY THE ENGINEER. THE TYPE OF WORK SHALL BE CLASSIFIED AS SOLENO.
6. Shoreline shaping and grading for the upper and lower ends of the dam shall be done in accordance with Method II. The location and limits shall be determined by the engineer. This material may be used as fill or fill as directed by the engineer.



PLAN OF SHORELINE SHAPING & GRADING



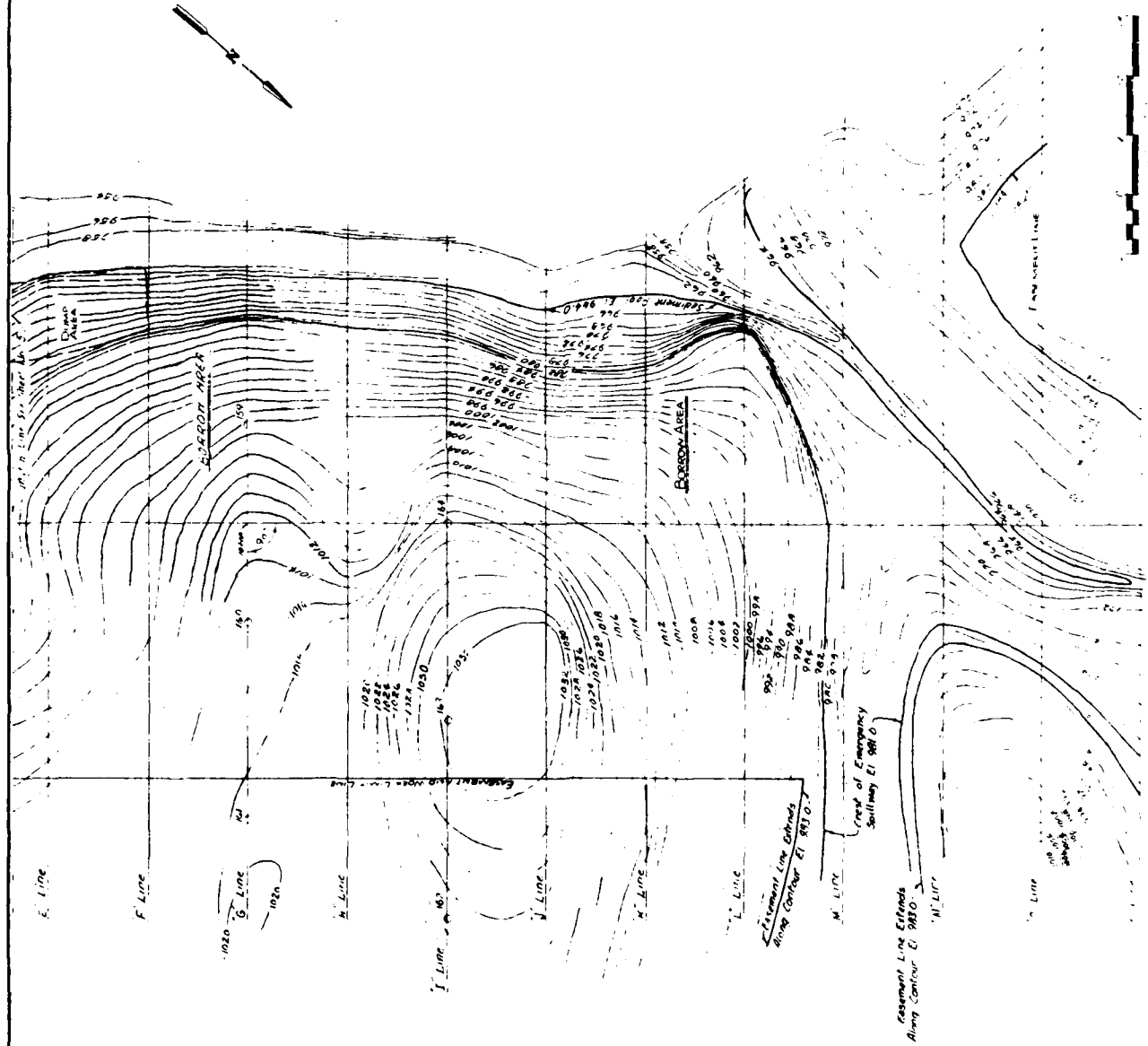
METHOD I



TYPICAL SECTION
METHOD II

DETAILS SHORELINE SHAPING & GRADING
Not To Scale

DAM NO 15	
SWEETWATER CREEK WATERSHED-MORRIS CO. TENN	
SHORELINE SHAPING & GRADING	
U. S. DEPARTMENT OF AGRICULTURE	
SOIL CONSERVATION SERVICE	
Prepared: CHARTREE & SCOTT	Drawn: BIRNS
TIN-2034-15	



DAM NO 15
 SWEETWATER CREEK WATERSHED MONROE CO. TENN
 PLAN - BORROW AREA
 U. S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE
 PREPARED BY S. C. SULLIVAN
 DATE 10-1-54
 V.F.C.
 TN-2034-15

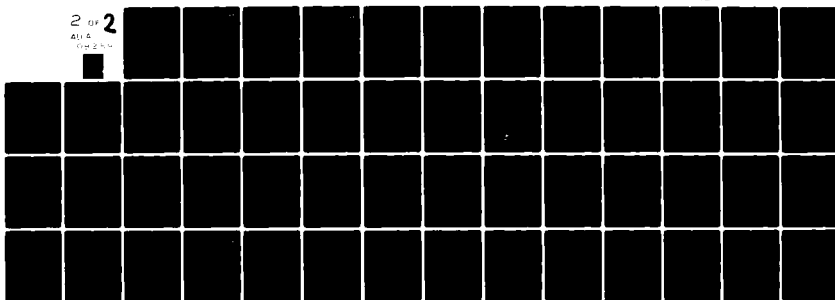
AD-A108 259

TENNESSEE STATE DEPT OF CONSERVATION NASHVILLE DIV 0--ETC F/6 13/13
NATIONAL PROGRAM OF INSPECTION OF NON-FEDERAL DAMS, TENNESSEE, --ETC(U)
SEP 81 G E MOORE DACW62-81-C-0056

UNCLASSIFIED

NL

2 OF 2
A114
Page 2 of 4



END

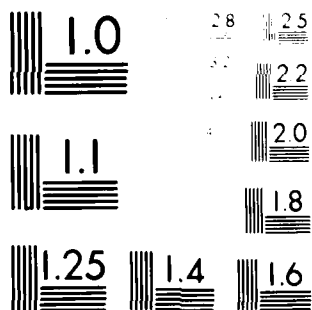
DATE

FILED

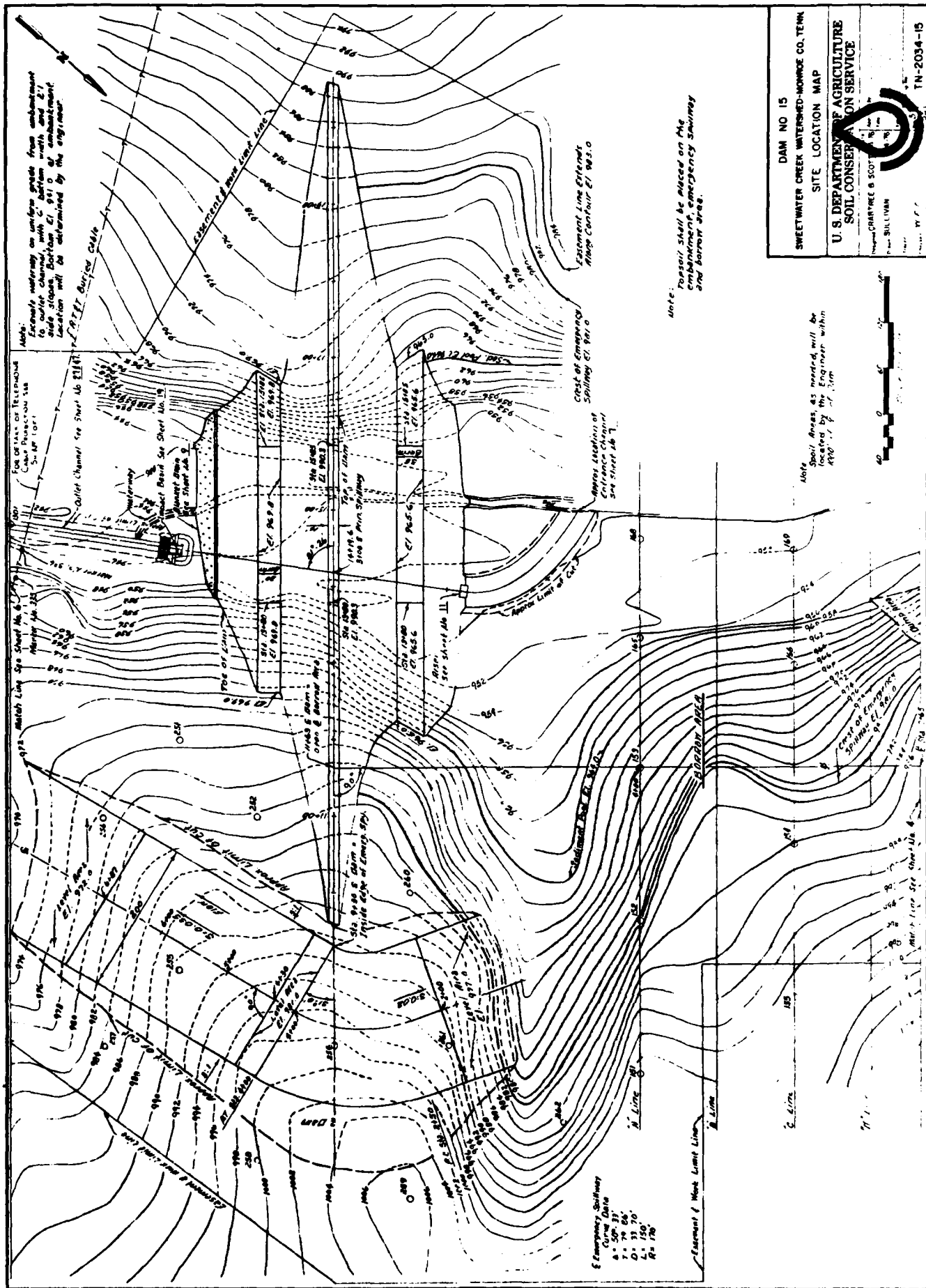
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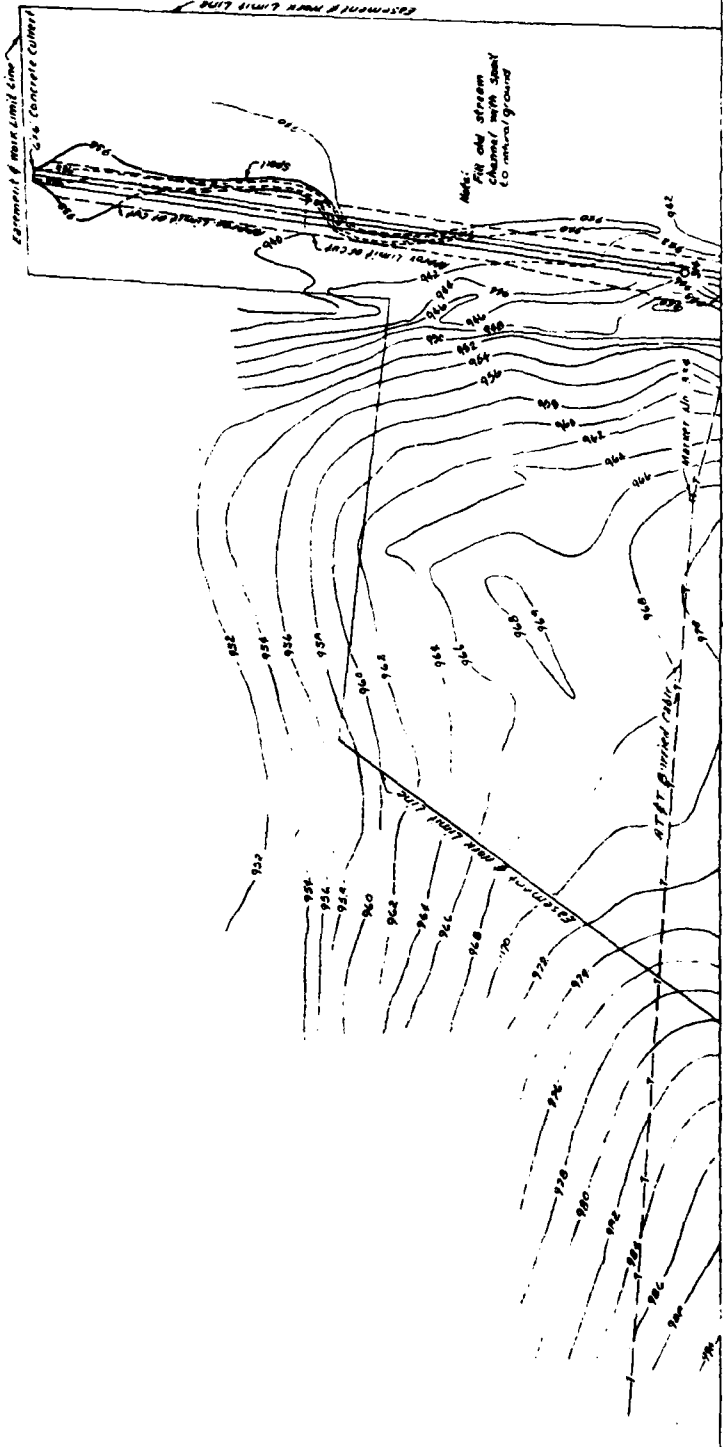
8 2 5



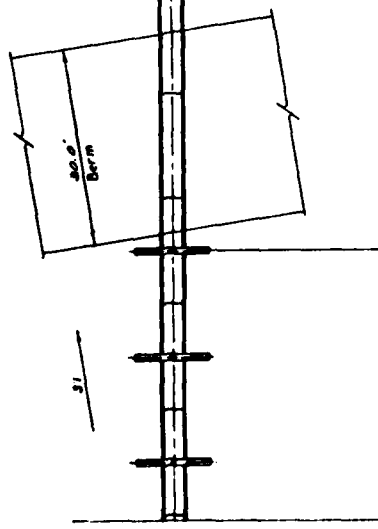
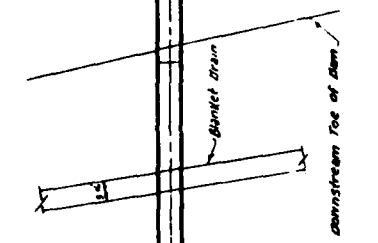
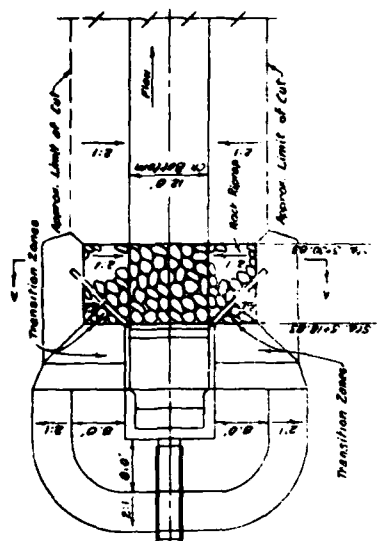
McKee-Vickrey Resolution Test Chart
No. 10000



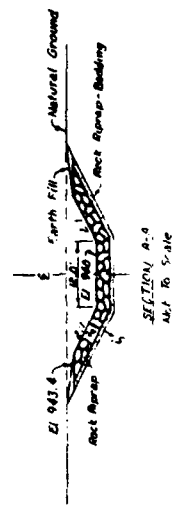
DAM NO 15
SWEETWATER CREEK WATERSHED-MORRIS CO. TENN.
SITE LOCATION MAP
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
 Prepared by CHARTER & SCOTT
 P. M. SULLIVAN
 1954
 TN-2034-15



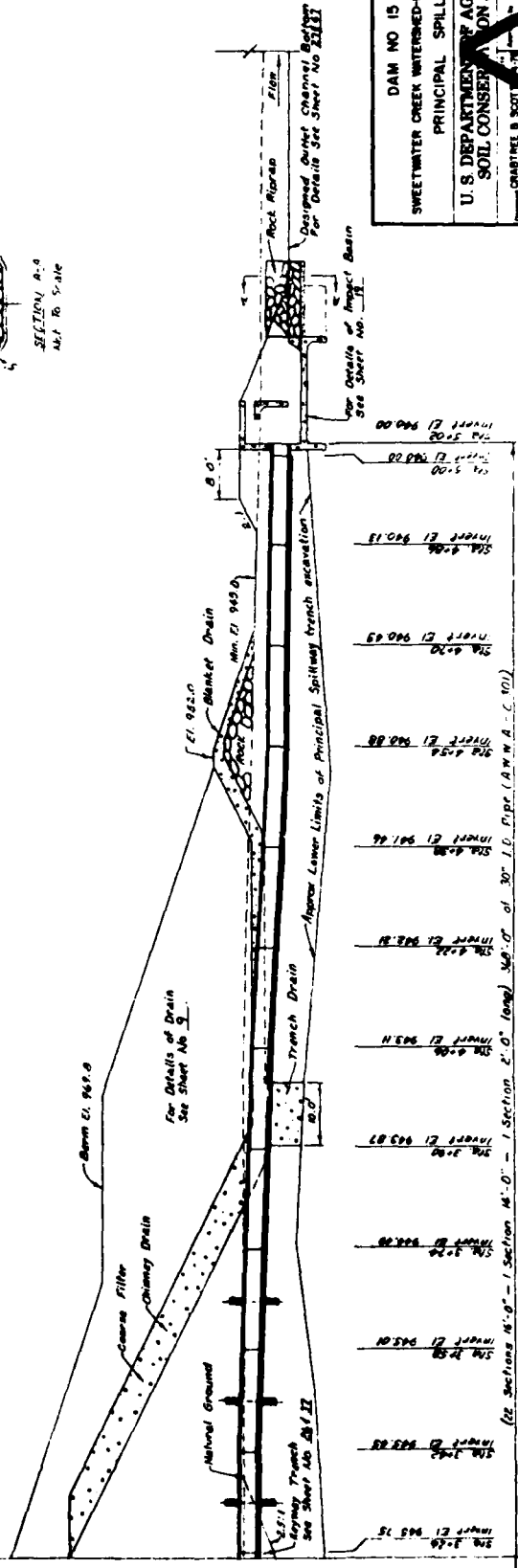
DAM NO 15
SWEETWATER CREEK WATERSHED-MONROE CO. TENN
SITE LOCATION MAP
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE
Prepared by: CHARLES B. SCOTT
Checked by: SALLIE HAIN
Date: 11/1/54
Project: WEC
TN-2034-15



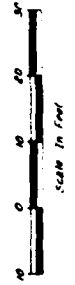
PLAN



SECTION A-A
Not To Scale



SECTION



DAM NO 15
SWEETWATER CREEK WATERED-MONROE CO. TENN
PRINCIPAL SPILLWAY
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
DESIGNED BY SULLIVAN
CHECKED BY BURNS
TN-2034-B

TN-2034-15

QUANTITIES		Co. Title
Case title		
Ask Mary Collins collecting table		
* Lark	2,389	
* Lark	23,679	
Total		
** The Laurel Post of Spaulding	0,07432	
Total	24,146	
1949		Page 1
Ask Mary Collins collecting table		14,529

Concrete quantities are based on an outside diameter of pipe and standard slope quantities do not change with shifts in diameter of pipe.

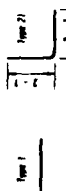
This quantity is given by

7 220 = 0.000000 (ft. x ft.) (ft. x ft.) cu yds.

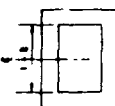
..... This quantity is given by

0.0734 = 0.0000 (ft. x ft.) cu yds.

D₁ = outside diameter of pipe furnished actually



BAR TYPES

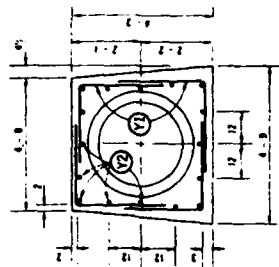


Front of Machine

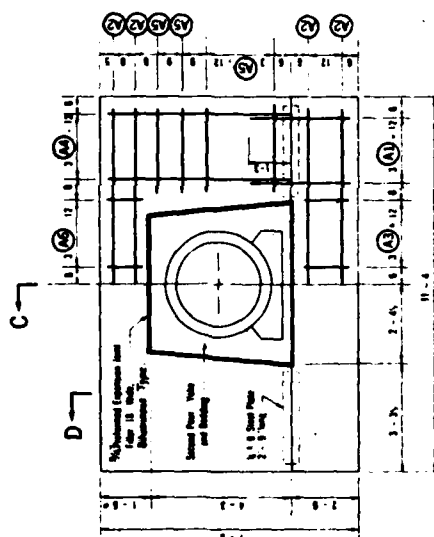
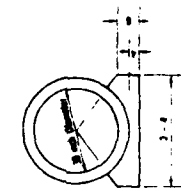
SUGGESTED SUPPORT BLOCKS

Selfies and blocks shall be provided to support the app in the required time and grids. The Contractor shall deliver the number and size of files as required. Budgets may be used as an alternative.

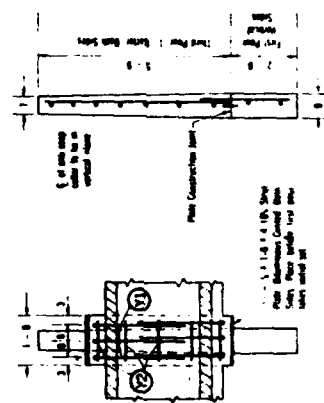
DAM NO 15 SWEETWATER CREEK WATERSHED SOURCE CO. TRNG	PIPE DETAILS	U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	Project No.		Drawing No.	Sheet No.
			CHARTREZ & SCOTT	4-75		
			Author	4-75	SAUNDERS	4-75
			Checker			
			Reviewer			
			Approved			
			W.S.C.			
						TN-2034-48



DETAIL OF ANTI-SLEEP COLLAR YOKE



DETAIL OF ANTI-SEEP COLLAR



DETAIL OF BEDDING

SECTION D-D

SECTION C-C

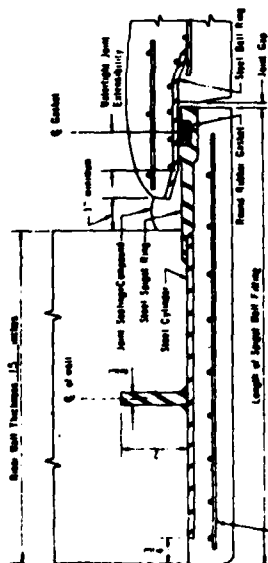
STRENGTH REQUIREMENTS					
	Infrared Load	Extremal Load			
Include Discrete Page	Minimum 1 Gage Bearing Strength on Points per Unit Load at Page		Average Load Spec. Variation	Load to produce 0.8% strain	
	Approx. C-3H	approx. C-3H		per inch long	
	Modulus of Elasticity		Load to produce 0.8% strain		
	1000				9777
	40				

The outside diameter of pipe assumed in design is 35.44 inches where the size furnished by an outside diameter grade table assumed in design. The three-edge bearing strength of the pipe furnished must not be less than the specified three-edge bearing strength multiplied by the ratio of the outside diameter of the pipe furnished to the outside diameter assumed in design.

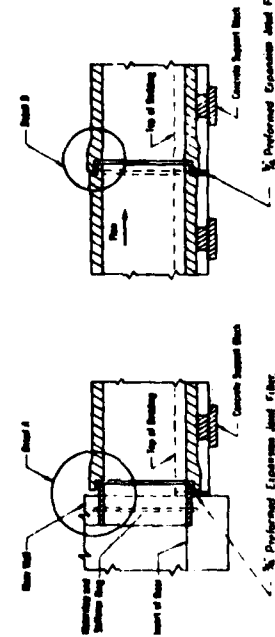
JOINT REQUIREMENTS			
Length of Pipe for 1 use	Blockage joint length in ft	Blockage joint allowing length in ft	Blockage joint allowing length in ft
2.0	2 3/4	2 3/4	2 3/4
16	2 3/4	2 3/4	2 3/4
4	2 3/4	2 3/4	2 3/4

for a few months after, then three, and afterwards still be-
fore a month has fully elapsed.

These sums of different lengths are converted, adjusting lengths, shall meet the requirements of the length: 3-28

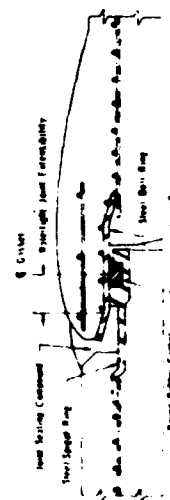


DETAIL A



DETAIL OF SPIGOT WALL FITTING

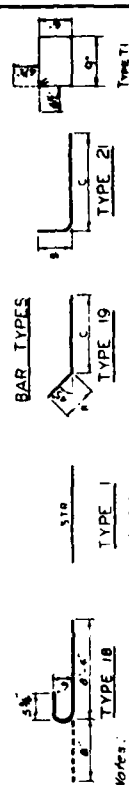
DETAIL OF PIPE JOINT



DETAIL B

DATE	270	TIME	00
STANDARD CONSULT DETAILS			
FOR			
REPRODUCED CONTENTS REMAINS PROP			
RIANCIAL OFFICER			
ADDRESS LOC IN ES 5030-BE			

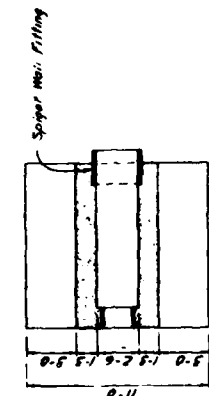
STEEL SCHEDULE

[illegible]

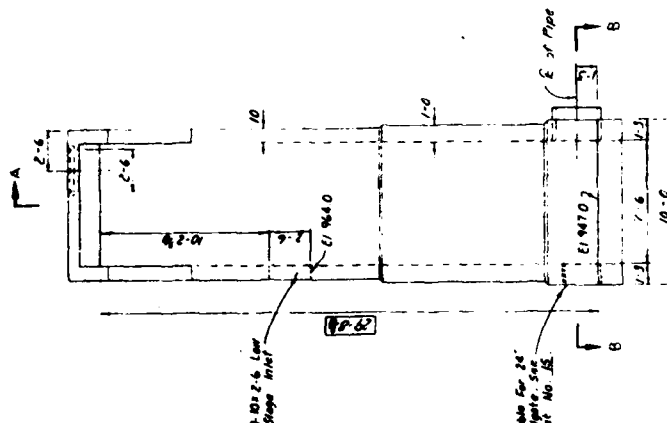
Notes:

- 1 For Methylene Chloride and Flame, See Detail Sheet 13
- 2 For Sogard Wall Fitting, See Detail Sheet 10
- 3 For Flat Rock Grating, See Detail Sheet 15
- 4 For Construction Joints, See Detail Sheet 10
- 5 For Joints, See Detail Sheet 10
- 6 Sheet Laying Note: Always Bend, Not Deflect
- 7 Embedding Joints: Lay up 8"

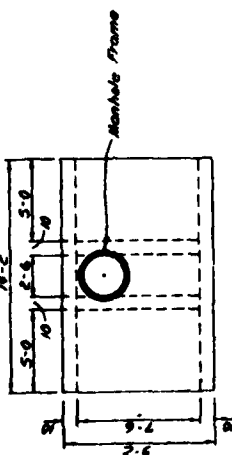
DAM NO 15
 SWEETWATER CREEK WATERSHED-MOORE CO, TENN
 RISER DETAILS
 U S S DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE
 CHAPPEE B SEC 4
 SULLIVAN
 TN-2034-15



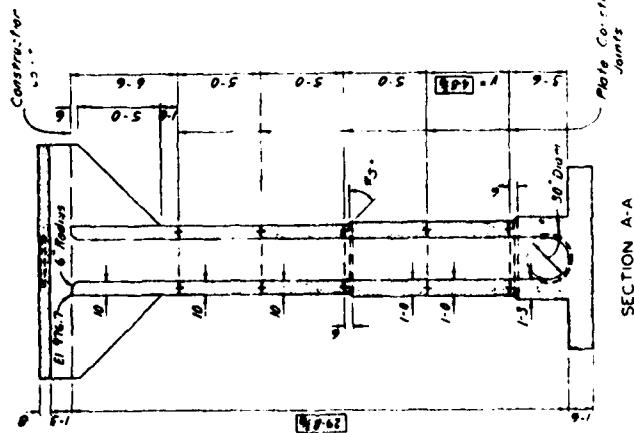
SECTION 8-B



SIDE ELEVATION



PLAN - TOP



SECTION A-A

Note: Carbon Steel Plate shall be continuous around pier and shall be welded at each corner and joint.

1/2" x 1/4" Carbon Steel shear plate

57804
" 3 Bars
04 Bars
05 Bars
06 Bars
07 Bars

QUANTITIES	325	Lin Fr
524 24	Lin Fr	Lin Fr
175.03	Lin Fr	Lin Fr
574.00	Lin Fr	Lin Fr
115.50	Lin Fr	Lin Fr

$$\begin{aligned} \text{Length of } \phi 5 \text{ Bars} &= (2,007 \cdot 4) + (\text{Length of Bars } P, R, M, S, T, U, V, W, X, Y, Z) \\ \text{Length of } \phi 6 \text{ Bars} &= (1,191 \cdot 0) + (\text{Length of Bars } P, R, S, T, U, V, W, X, Y, Z) \\ \text{Total Concrete} &= (31 \text{ m}) \cdot (0.99 \text{ m}) \cdot (1.56 \text{ m}) \end{aligned}$$

2009

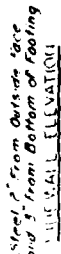
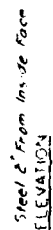
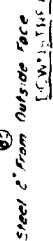
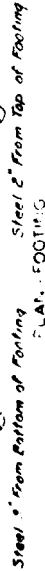
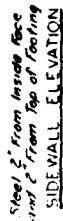
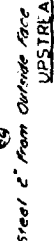
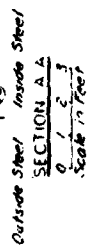
DETAIL OF PLATE CONSTRUCTION JOINT

STANDARD COVERED RISER

Sum Cond 7 Aug 75
17 = 4000 lbs
18 = 1600 lbs

$\frac{d}{dt} \left(\frac{\partial L}{\partial v^i} \right) = \frac{\partial L}{\partial x^i}$

ES 3030 3070A

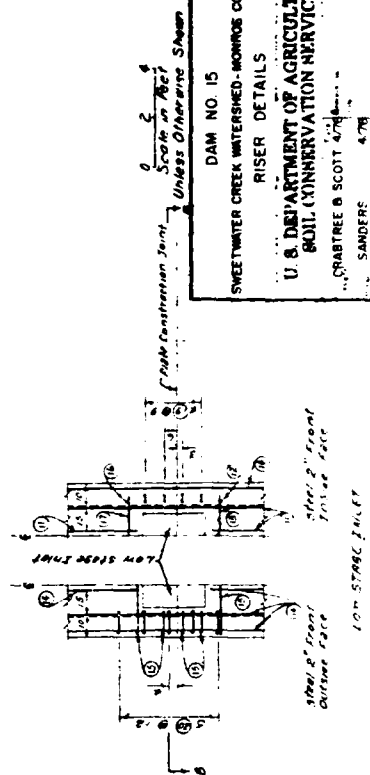


0 2 4
Scale in Feet
Unless Otherwise Shown

Note
Field bond or cut steel was
needed to install wall timbale.

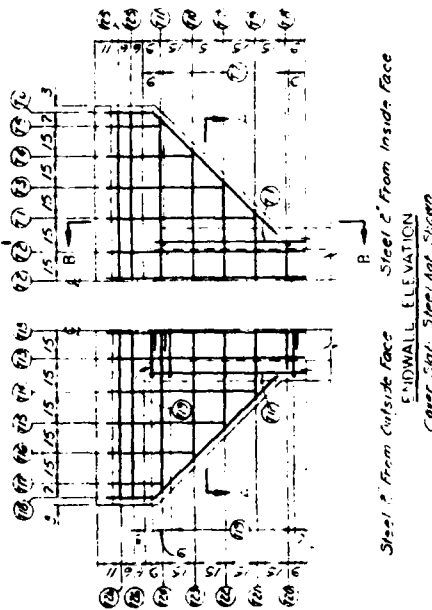
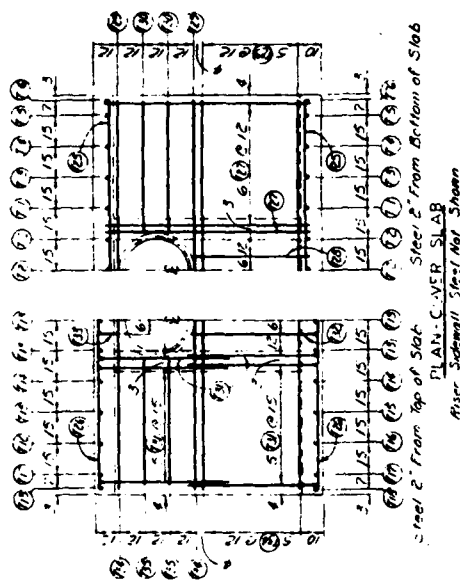
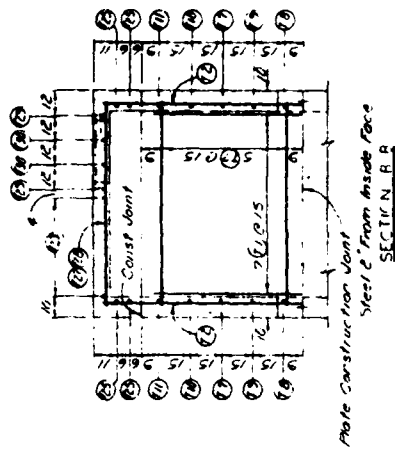
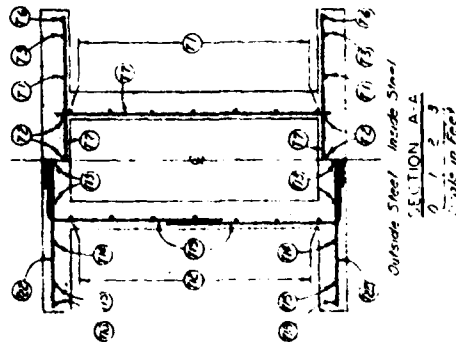
DAM NO 15
 SWEETWATER CREEK WATERED-MOWIDE CO. TENN.
 RISER DETAILS
 U. S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE
 JOHN H. CHAFFIN & SONS
 SAMMERS
 4-19
 5-26-55
 TN-2034-15

	S' AMOANSI COVERED RISER	
GROSS CORR L ^g -T ^s	L ^c = 7000 psi I ^c = 1680 psi D=9 I ^t = 20 000 psi	
CORROSION LOSS FOR T ^s	5' 32.0 3020R	
TOTAL C.D.		METERS 2 OF



DAM NO. 15
SWEETWATER CREEK WATERSHED - MONROE CO., TENN.
RISER DETAILS
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
CRABTREE & SCOTT ARCHT.
SANDERS
TN. 2034-15

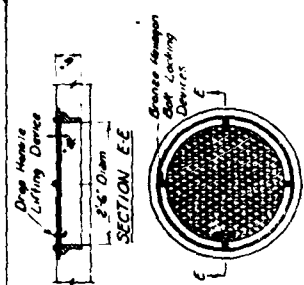
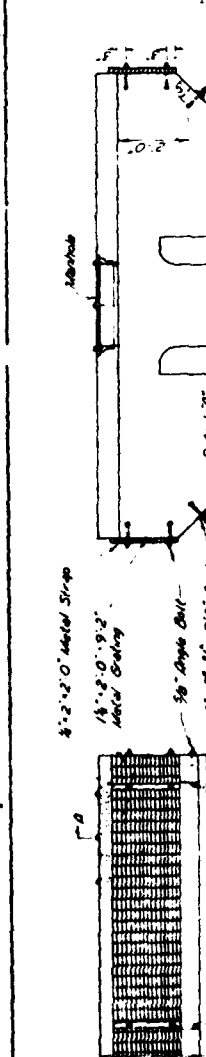
STANDARD COVERED RISE



0 1 2 3
5' 0" in Feet
Unless Otherwise Shown

DAM NO 15
SWIFTWATER CREEK WATERBED-MORRIS CO. TENN
RISER DETAILS
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
PROJECT NO. 15-2034-15
DATE 11/1/55

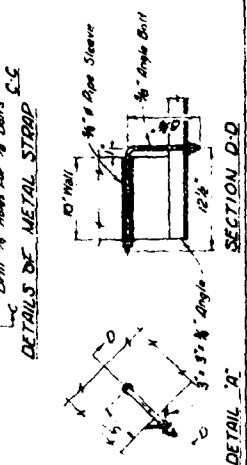
STANDARD CIVIL ENGINE
DESIGNATION 11-1-100-10
DATE 11-1-100-10
PROJECT NO. 15-2034-15
DATE 11-1-100-10



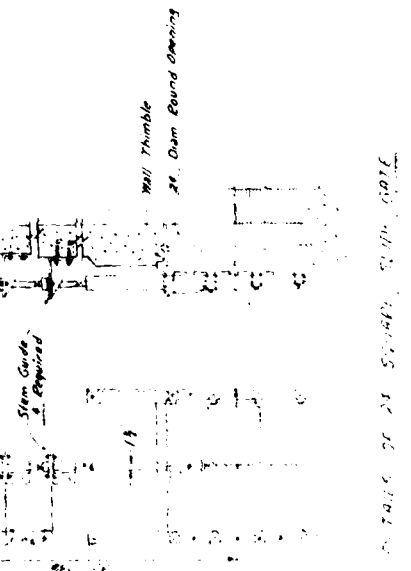
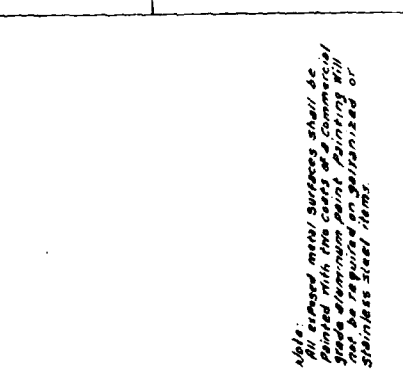
PLAN

DETAILS OF MANHOLE COVER

BILL OF MATERIAL FOR HIGH STAGE TANK ROOF			
Item	Quan	Length	Net Cost
3" x 3" x 1/4" Angles	32	9' 2"	110.00
3" x 3" x 1/4" Bolts - nuts & washers	32	1	94.00
1/2" D. Pipe	32	0' 10"	24.00
1 1/2" x 2" Metal Grating	2	9' 2"	18.00
4" x 2" Metal Straps	8	2'	8.00



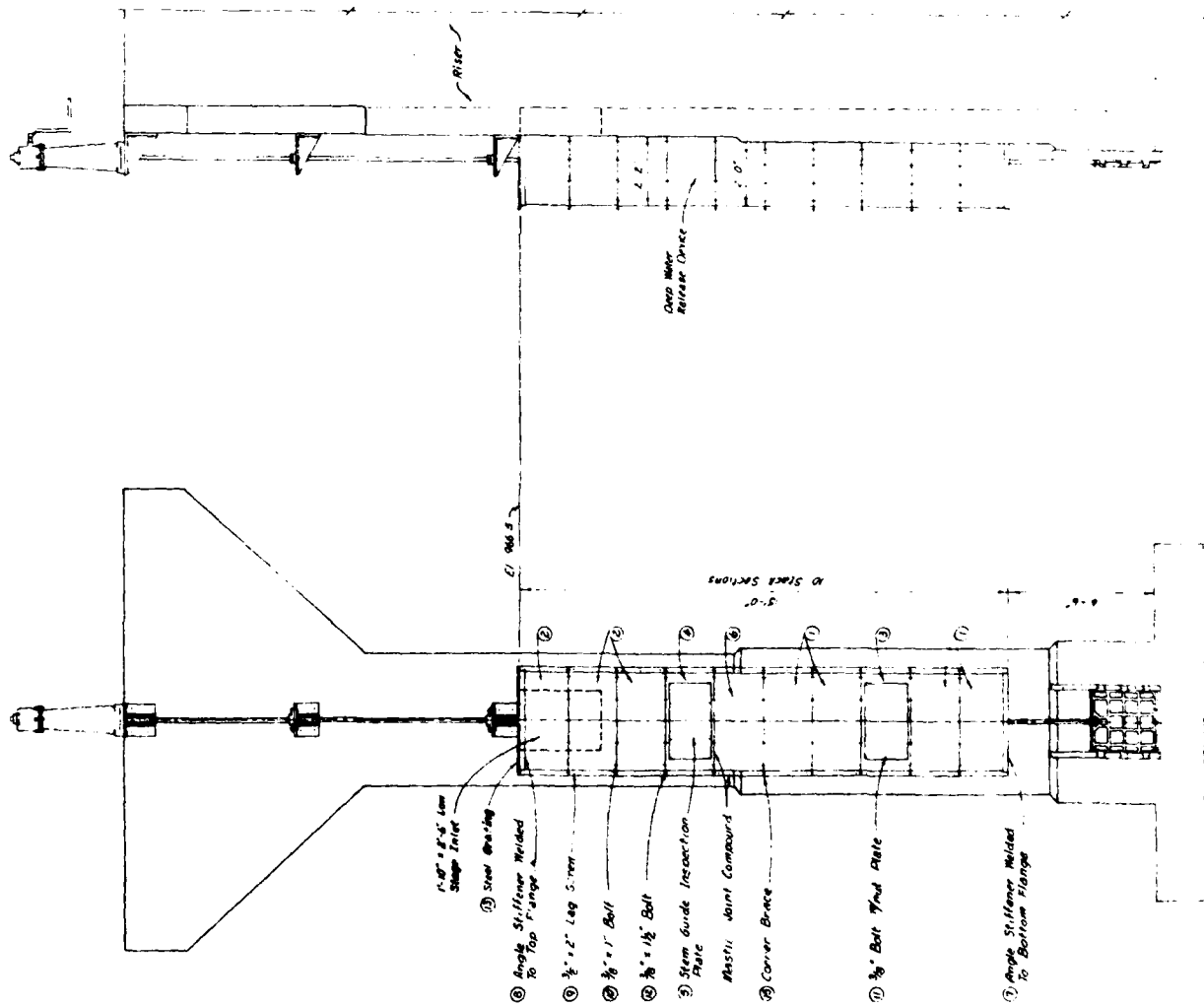
Use
all fresh rock
bolts and nuts
shall be galvanized.
all nuts shall be hexagonal.



THE GATE ASSEMBLY SHALL INCLUDE THE FOLLOWING

1. All "A" side gate class SS-40 Flat back, type MMS-1
2. 5/16" thread, square flange, round opening, type "C", 12" length.
3. Stem guide fully adjustable compatible with gate stem
4. Gate stem shall be 1 1/2" diameter. Steel flanging action shall be compatible with gate and lifting device.
5. Fall bracket and lift assembly shall be compatible with 300-ton stem furnace.

DAM NO 15
 SWEETWATER CREEK WATERSHED-MONROE CO, TENN
 DETAILS OF TRASH BACK, HEADGATE & BARGE COVER
 U.S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE
 CHRISTIE & SCOTT
 4 75
 4 75
 SULLIVAN
 TN 38415



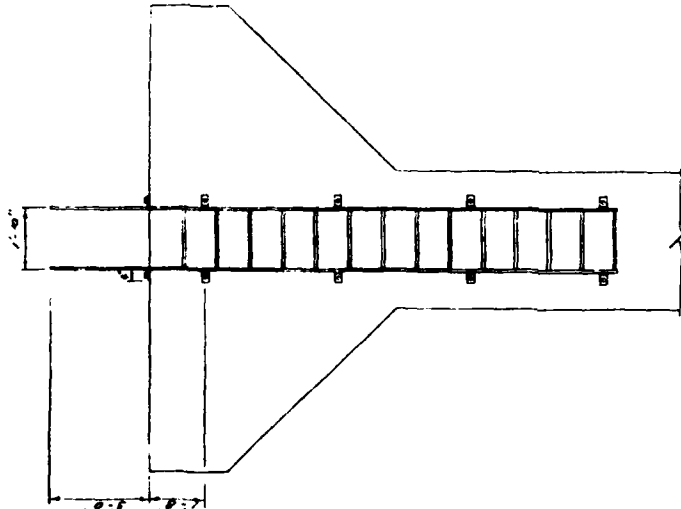
NOT TO SCALE

DAM NO 15
SWEETWATER CREEK WATERSHED-MONROE CO. TENN
DEEP WATER RELEASE DEVICE
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

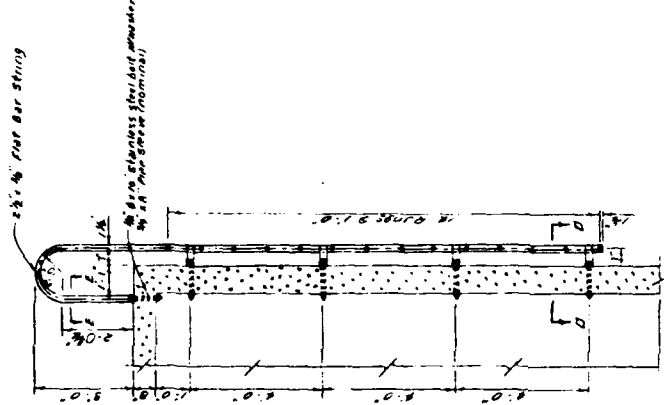
CHARLES B. SCOTT 4 7/8
SANDERS 4 7/8
BURNS 4 7/8
5 24 45 TN-2034-B

UPSTREAM ELEVATION

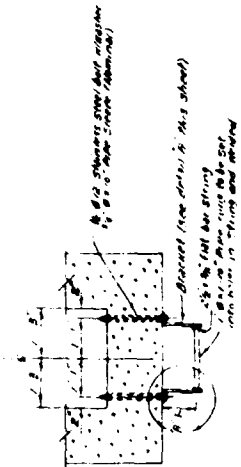
SIDE ELEVATION



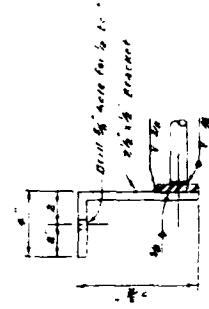
DOWNSTREAM ELEVATION



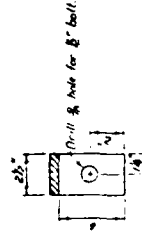
SIDE ELEVATION



SECTION A-A



DETAIL A



SECTION C-C

BILL OF MATERIAL FOR LADDER

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	TOTAL
1	2 1/2\"/>	14	ft.	28.0
2	2 1/2\"/>	14	ft.	28.0
3	2 1/2\"/>	14	ft.	28.0
4	2 1/2\"/>	14	ft.	28.0
5	2 1/2\"/>	14	ft.	28.0
6	2 1/2\"/>	14	ft.	28.0
7	2 1/2\"/>	14	ft.	28.0
8	2 1/2\"/>	14	ft.	28.0
9	2 1/2\"/>	14	ft.	28.0
10	2 1/2\"/>	14	ft.	28.0
11	2 1/2\"/>	14	ft.	28.0
12	2 1/2\"/>	14	ft.	28.0
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14	2 1/2\"/>	14	ft.	28.0
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98	2 1/2\"/>	14	ft.	28.0
99	2 1/2\"/>	14	ft.	28.0
100	2 1/2\"/>	14	ft.	28.0

DAM NO 15

SWEETWATER CREEK INTERMED-WOODCO CO. TERN

LADDER DETAILS

U. S. DEPARTMENT OF AGRICULTURE

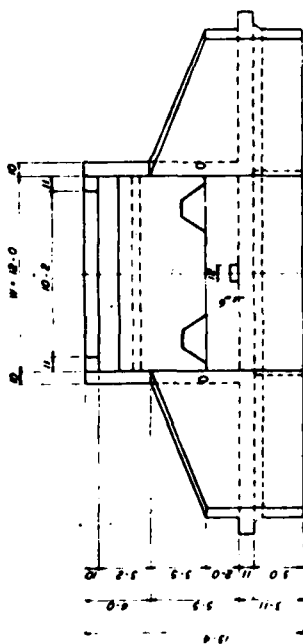
SOIL CONSERVATION SERVICE

CHARLES E. SCOTT

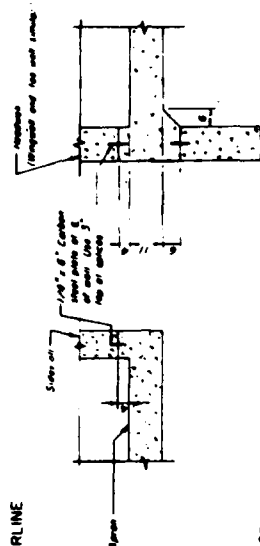
JOHN SULLIVAN

1958

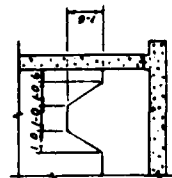
TN-2034-B



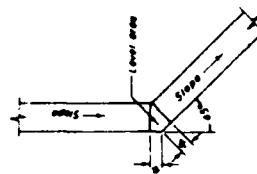
DOWNSTREAM ELEVATION



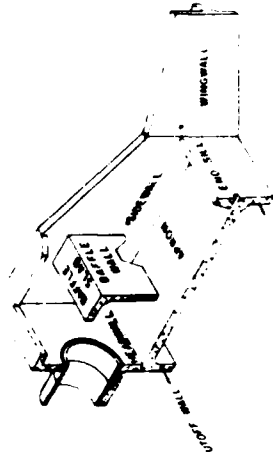
SECTION ON CENTERLINE



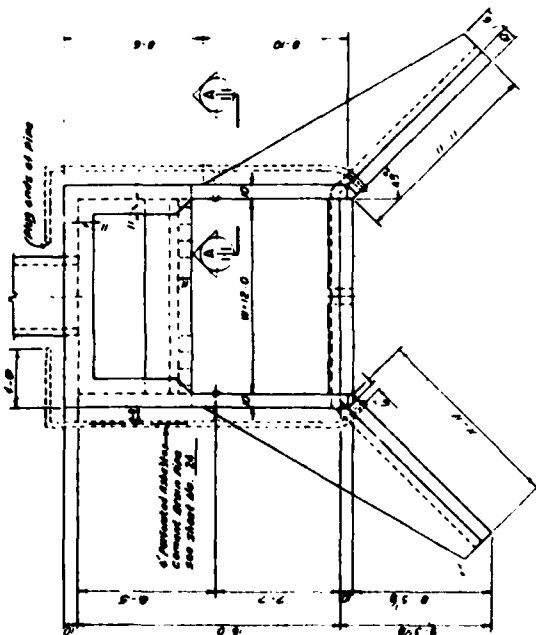
SECTION (A)
NOT TO SCALE



PLAN - JUNCTION
DOE WALL AND
MAGNUS
NOT TO SCALE



PLAN



PLAN

CONSTRUCTION JOINT DETAILS

NOT TO SCALE

Notes:

12

QUANTITIES

[illegible]

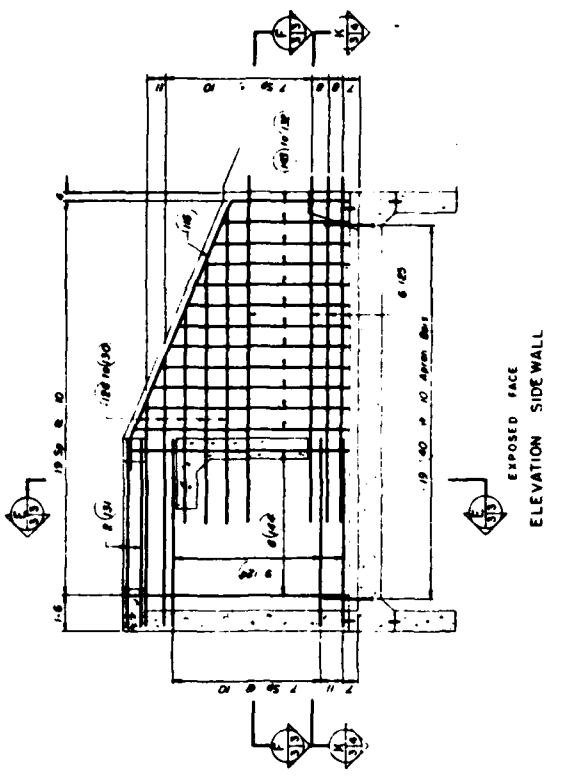
DAM NO 15
SWEETWATER CREEK WATERSHED-MONROE CO, TENN
DETAILS - IMPACT BASIN
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

DATE: 10/10/2014

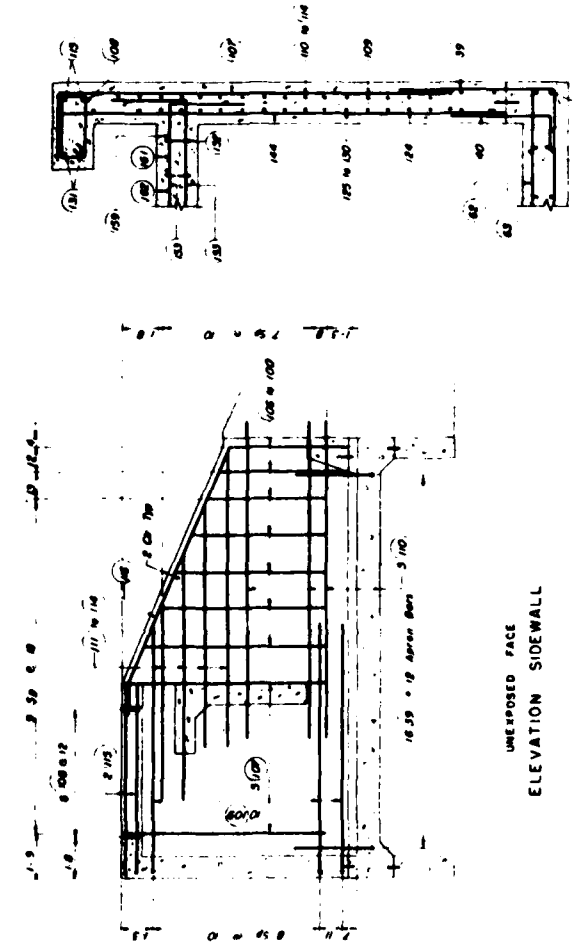
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STANDARD IMPACT BASIN	4120
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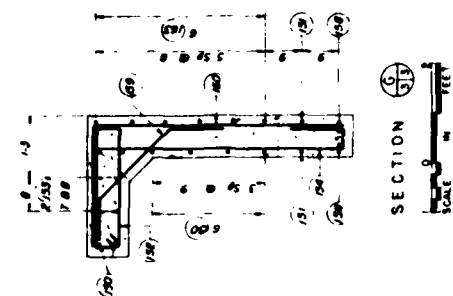
SCALE IN FEET



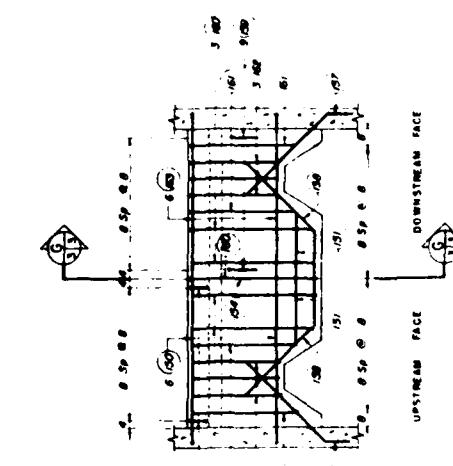
EXPOSED FACE
ELEVATION SIDEWALL



UNEXPOSED FACE
ELEVATION SIDEWALL



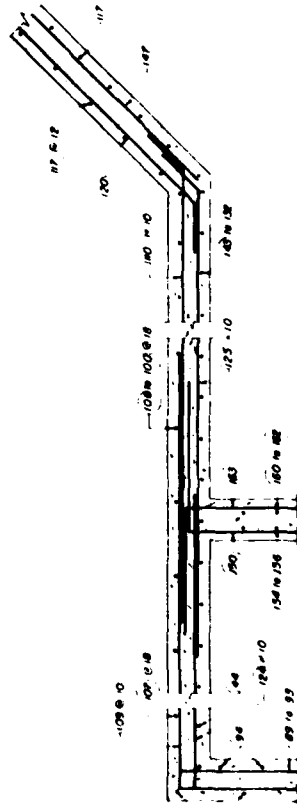
SECTION
SCALE 1" = 10'



UPSTREAM FACE
DOWNSTREAM FACE
BAFFLE ELEVATION



SECTION
SCALE 1" = 10'

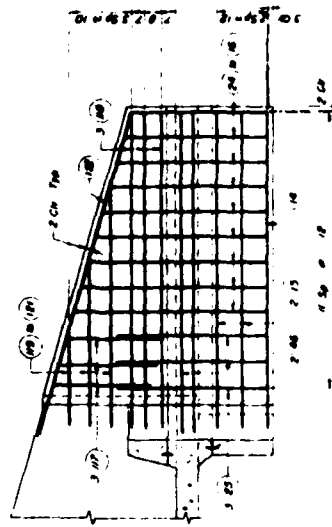


SECTION
SCALE 1" = 10'

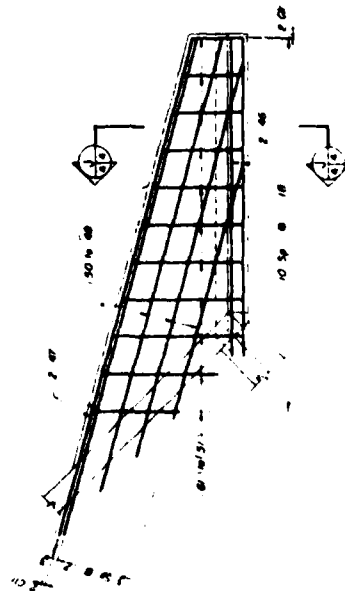
DAM NO 15
SWEETWATER CREEK WATERSHED-MONROE CO, TENN
DETAILS-IMPACT BASIN
DESIGNED BY
SOIL CONSERVATION SERVICE
DRAWN BY
CHECKED BY
DATE
TIN-2034-15

SCALE
1" = 10'

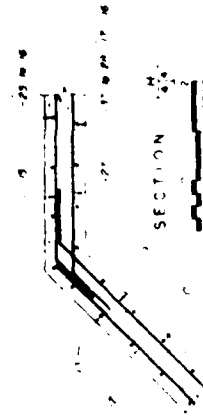
STAYCARS MPA	BAS
DATE	12/1/80
DESIGNED BY	STAYCARS
CHECKED BY	STAYCARS
DATE	12/1/80
SCALE	1" = 10'



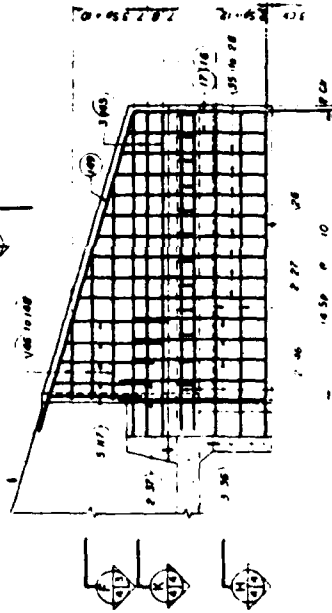
EXPOSED FACE
WINGWALL ELEVATION



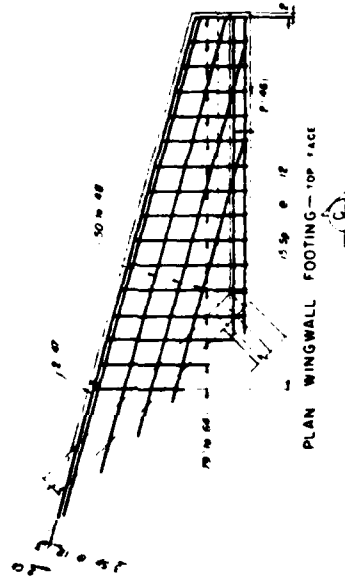
PLAN WINGWALL FOOTING-BOTTOM FACE



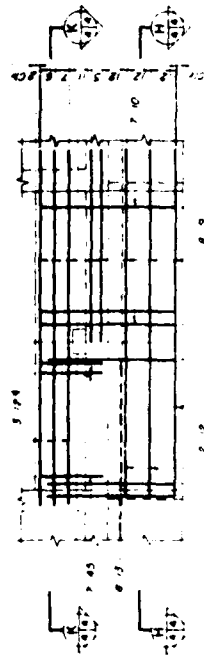
SECTION



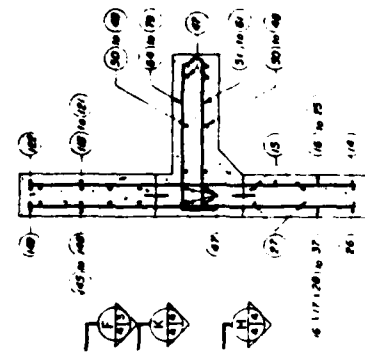
EXPOSED FACE
WINGWALL ELEVATION



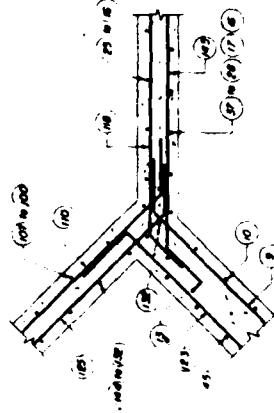
PLAN WINGWALL FOOTING-TOP FACE



SECTION



SECTION



SECTION

DAM NO 15
SWEETWATER CREEK WATERSHED-MONROE CO. TENN
DETAILS-IMPACT BASIN
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
CARTER & SONS
SANDHURST
TENN 37155
TN-2034-15

STANDARD IMPACT BASIN	DATE	DESIGN	CONTRACT	NO.	20,000	ES-4120	BY	DATE	BY	DATE
DESIGN	CONTRACT	NO.	20,000	ES-4120	BY	DATE	BY	DATE	BY	DATE
DESIGN	CONTRACT	NO.	20,000	ES-4120	BY	DATE	BY	DATE	BY	DATE

ELEVATION OF END SILL B TOEWALL

[illegible]

30 I D CONDUIT							36 I D CONDUIT							42 I D CONDUIT							48 I D CONDUIT							I D CONDUIT						
LOCATION	NAME	SIZE	QUANTITY	TYPE	B	C	TOTAL LENGTH	LOCATION	NAME	SIZE	QUANTITY	TYPE	B	C	TOTAL LENGTH	LOCATION	NAME	SIZE	QUANTITY	TYPE	B	C	TOTAL LENGTH	LOCATION	NAME	SIZE	QUANTITY	TYPE	B	C	TOTAL LENGTH			
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DAM NO. 15
SWEETWATER CREEK WATERSHED-MONROE CO, TENN
STEEL SCHEDULE - IMPACT BASIN
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

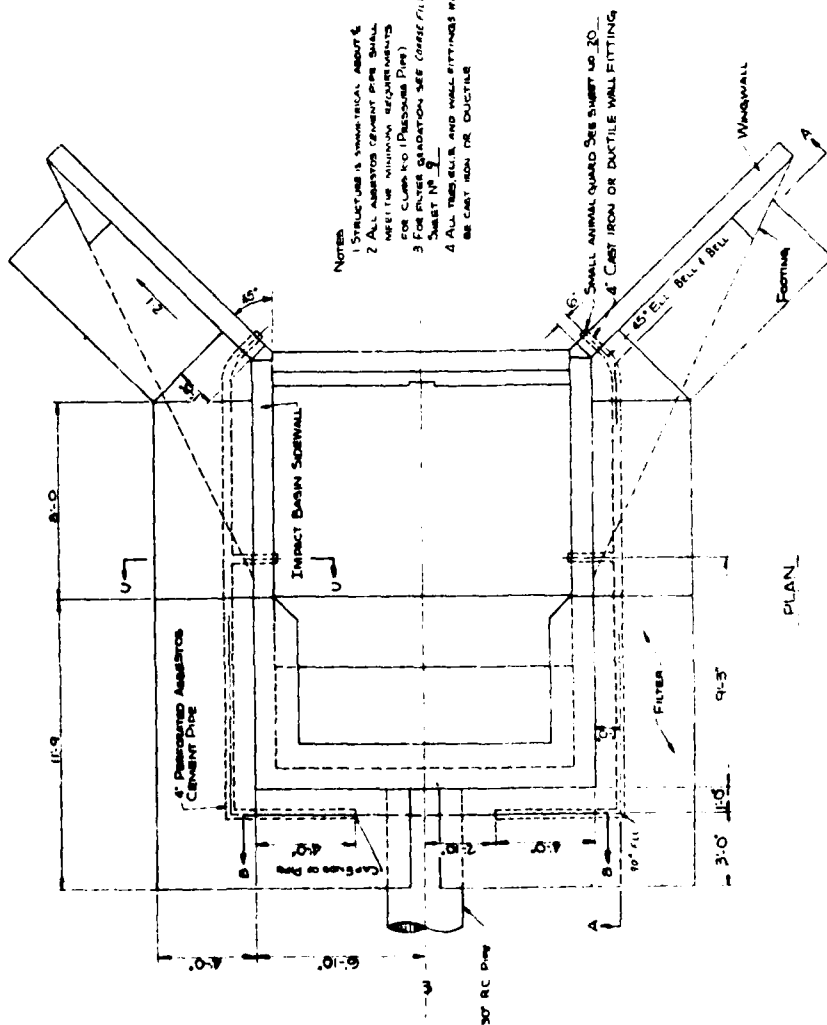
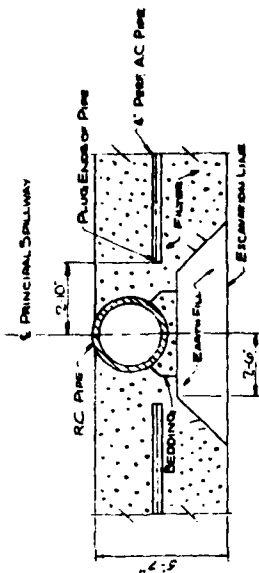
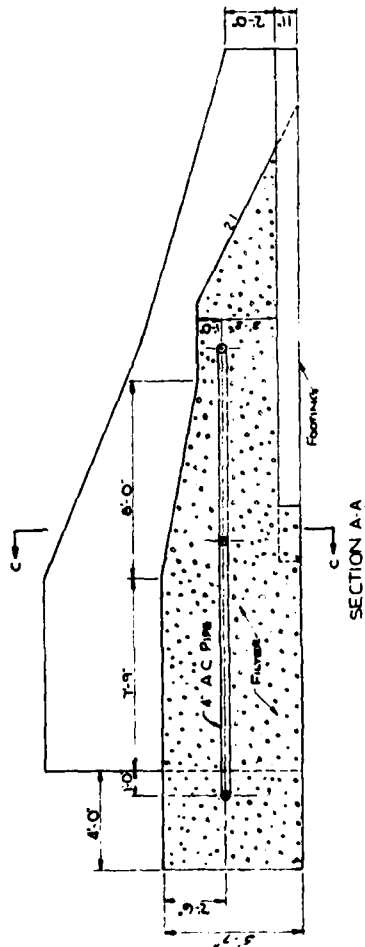
TURNS		TURNS	
NO	TIME	NO	TIME
1	1.10	11	1.10
2	1.15	12	1.15
3	1.20	13	1.20
4	1.25	14	1.25
5	1.30	15	1.30
6	1.35	16	1.35
7	1.40	17	1.40
8	1.45	18	1.45
9	1.50	19	1.50
10	1.55	20	1.55
TOTALS 1.10		TOTALS 1.10	

CARL ROMER
 Consulting Engineer
 854 Riverside Blvd. Suite 2000
 New York, New York 10024

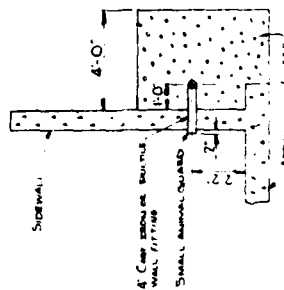
STANDARD	IMPACT	BASIN
DESIGN CONDITIONS	$P_c = 4,000 \text{ psi}$	$P_c = 800 \text{ psi}$
	$P_c = 0$	$P_c = 20,000 \text{ psi}$

STANDARD FORM NO. 63-4120

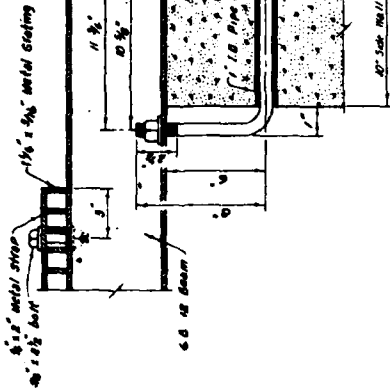
576 575 TN-2034-15



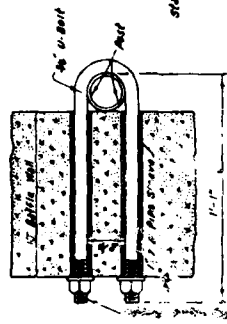
- NOTES:
1. Structure is a temporary structure.
 2. All materials (except pipe) shall be of the minimum requirements for Class II (Pressure Pipe).
 3. For pipe installation see (see) Filter Sheet in 2.
 4. All materials and wall fittings will be cast iron or ductile.



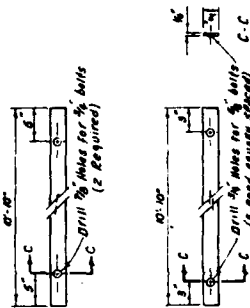
DAM NO 15		SWEETWATER CREEK WATERED-MONROE CO. TENN.
FILTER DETAILS - IMPACT BASIN		
U.S. DEPARTMENT OF AGRICULTURE		
SOIL CONSERVATION SERVICE		
CHARPREE & SCOTT	4-28	4-28
SULLIVAN	4-28	4-28
PREPARED	4-28	4-28
U.S.C.	4-28	4-28
TN-2034-B5		



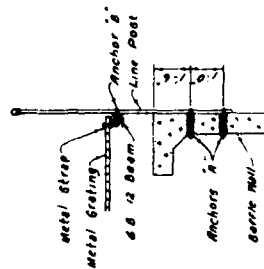
DETAIL "B"



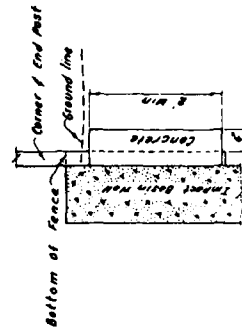
DETAILS - LINE POST ANCHOR



DETAILS OF METAL STRAPS



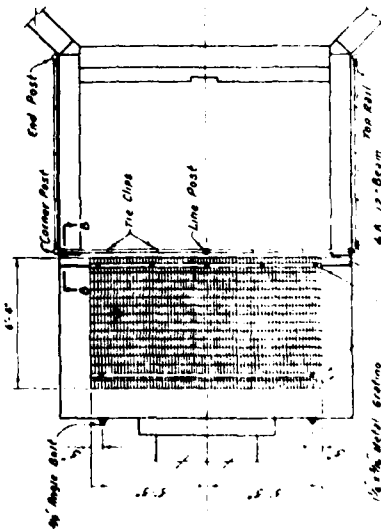
DETAILS - LINE POST



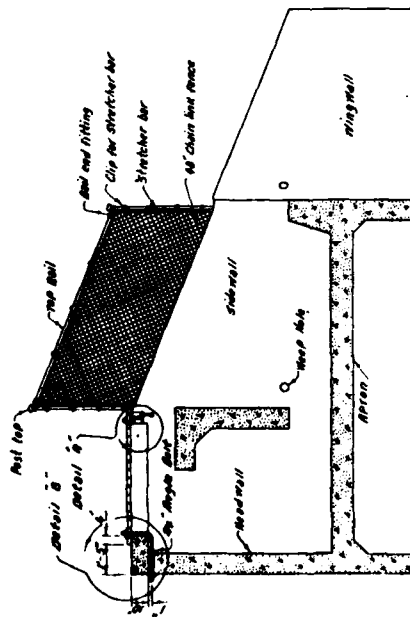
DETAILS - CORNER & END POST



DETAILS OF GRATING



$\frac{1}{4} \times \frac{1}{4}$ Metal Grating



ELEVATION

BILL OF MATERIALS FOR CHAIN LINK FENCE

- | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

Misc items necessary
for fence installation

BILL OF MATERIALS FOR IMPACT BASIN COVER

- | | |
|---|--|
| 1 | 6 p 12 Beam B-8" long |
| 2 | 3/4" x 6" x 1 1/2" Angle bolts, nuts & washers |
| 3 | 3/4" x 1 1/2" x 1 1/2" Angle bolts, nuts & washers |
| 4 | 1" x 1" pipe steel 1" long |
| 5 | metal grating length 6' x width 10' |
| 6 | 3/4" x 1/2" x 6" metal strip |
| 7 | 3/4" x 2" bolts, nuts & washers |

Notes

1 All metal grating, beam straps, bolts, nuts washers pipe steeres shall be galvanized after fabrication All nuts shall be hexagonal.

2. Existing General Warrants will be determined by the contractor

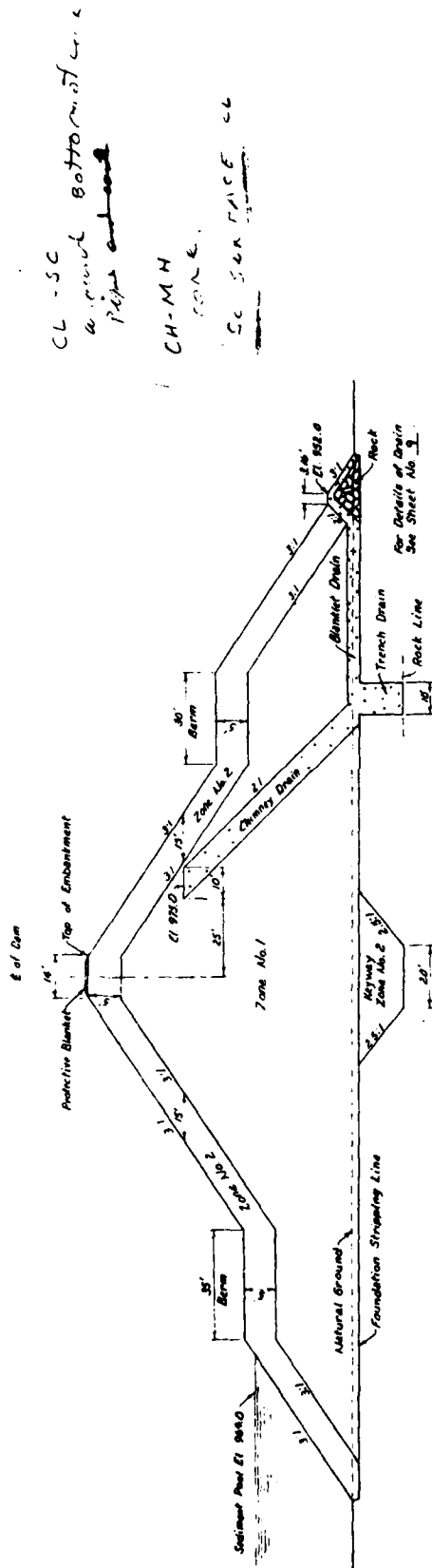
DAM NO 15

SWEETWATER CREEK WATERSHED-MONROE CO., TENN
IMPACT BASIN COVER & FENCE DETAILS
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

475
RABINOFF & SCOTT
475

SANDERS 478

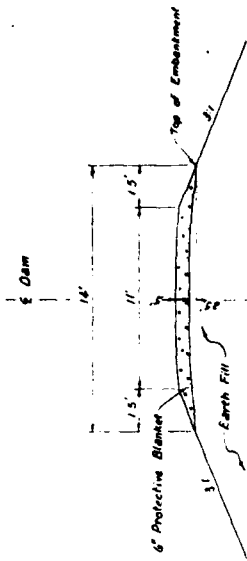
TN-2034-15



TYPICAL SECTION - EMBANKMENT

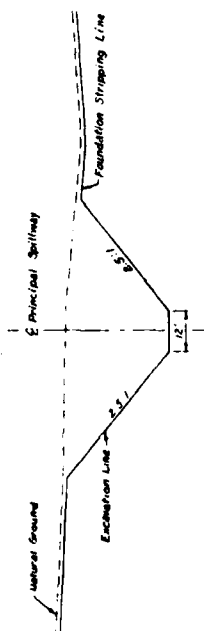
REQUIRED USE OF EXCAVATED MATERIAL									
EMBANKMENT ZONE		SOURCE OF FILL MATERIAL			LAB TEST		COMPACTION REQUIREMENTS		
Zone No.	Description	Location	Depth, Feet	From	Standard	Max Dry Density, lb/cu ft	Min Dry Density, lb/cu ft	Moisture Limit, %	Lab Curve No.
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	1
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	2
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	3
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	4
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	5
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	6
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	7
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	8
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	9
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	10
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	11
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	12
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	13
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	14
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	15
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	16
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	17
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	18
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	19
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	20
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	21
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	22
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	23
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	24
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	25
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	26
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	27
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	28
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	29
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	30
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	31
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	32
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	33
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	34
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	35
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	36
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1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	47
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1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	49
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1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	52
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	53
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	54
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	55
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	56
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	57
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	58
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	59
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	60
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	61
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	62
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	63
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	64
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	65
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	66
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	67
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	68
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	69
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	70
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	71
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	72
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	73
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	74
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	75
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	76
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	77
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	78
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	79
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	80
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	81
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	82
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	83
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	84
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	85
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	86
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	87
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	88
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	89
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	90
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	91
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	92
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	93
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	94
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	95
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	96
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	97
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	98
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	99
1	Inside	Emergency Soilway	1	10	94.5	25.5	89.0	-3	100

Notes:
 1. The engineer will direct a selective placement of all fill materials in consideration of the preferred uses shown in the table above.
 2. Zones shown are for guidance in placement only and are not intended to be used as a basis for the extent that materials are available to construct the zones is recommended in the table above.



DETAILS OF PROTECTIVE BLANKET
 (From Approx Sta 9+63 To Approx Sta 20+50)

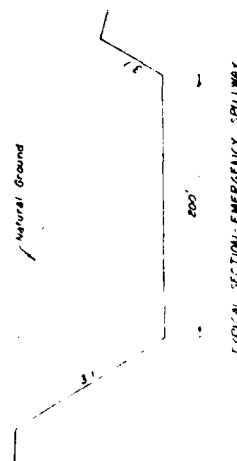
DAM NO 15
 SWEETWATER CREEK WATERED-MONROE CO. TENN
 TYPICAL SECTION - EMBANKMENT
 U. S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE
 CHARTER 8 SCOTT
 BURNS
 TN-2034-15



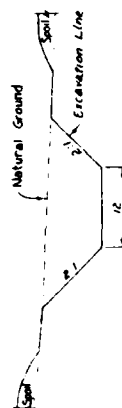
TYPICAL SECTION - PRINCIPAL SPILLWAY TRENCH



TYPICAL SECTION - STREAM CHANNEL CLEAROUT



TYPICAL SECTION - EMERGENCY SPILLWAY



TYPICAL SECTION - OUTLET CHANNEL

Not To Scale

DAM NO 15

SWEETWATER CREEK WATERSHED-MONROE CO. TENN

TYPICAL SECTIONS

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

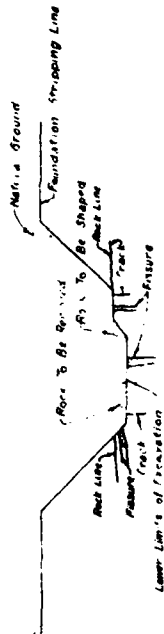
CHARTER & SCOTT
ENGINEERS

MEMPHIS

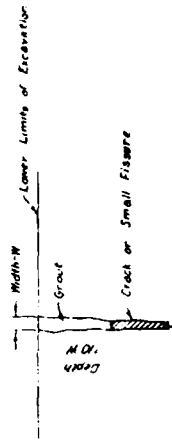
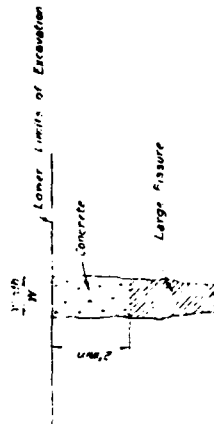
DATE

TN-2034-15

- Notes:
1. Lower limits of bays, from above the 12-14 to above the 18-20, and principal spillway trench excavation must be a suitable rock surface that will be satisfactory as a foundation for the dam.
 2. Small cracks and fissures of 2" or less shall be cleaned to a depth of 1/4" with water and air prior to filling with grout.
 3. Fissures larger than 2" wide shall be excavated to a 2' wide depth with machine, air, or hand, then cleaned with water and air prior to filling with concrete.
 4. The rock surface shall be smoothed by the removal of small protruding areas and shaping the sides of the large protruding areas to a positive slope. The areas to be smoothed or shaped will be designated by the engineer.

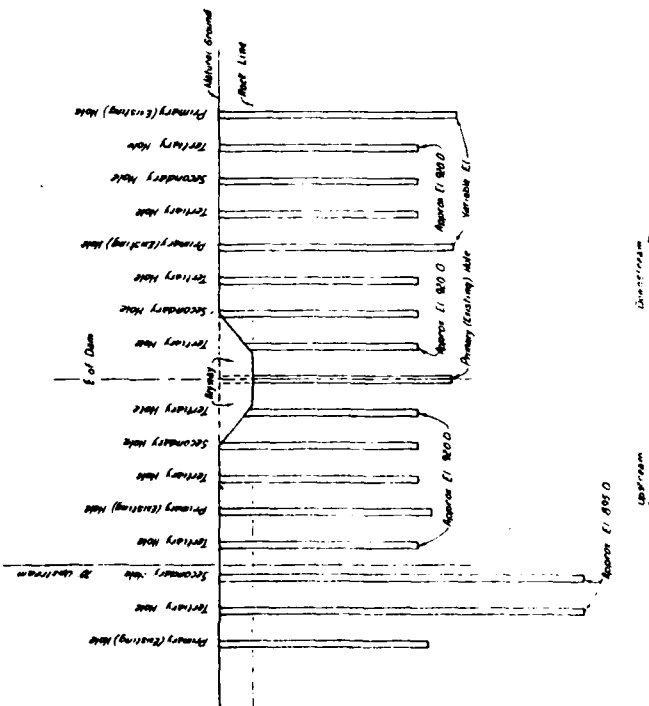


TYPICAL DENTAL FOUNDATION TREATMENT

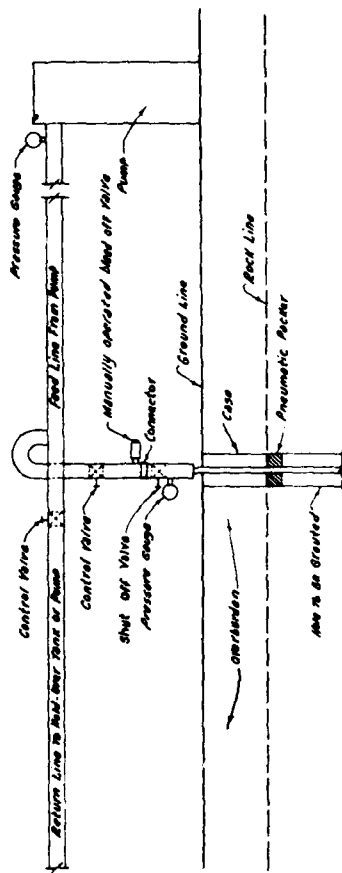


DETAILS OF DENTAL FOUNDATION TREATMENT

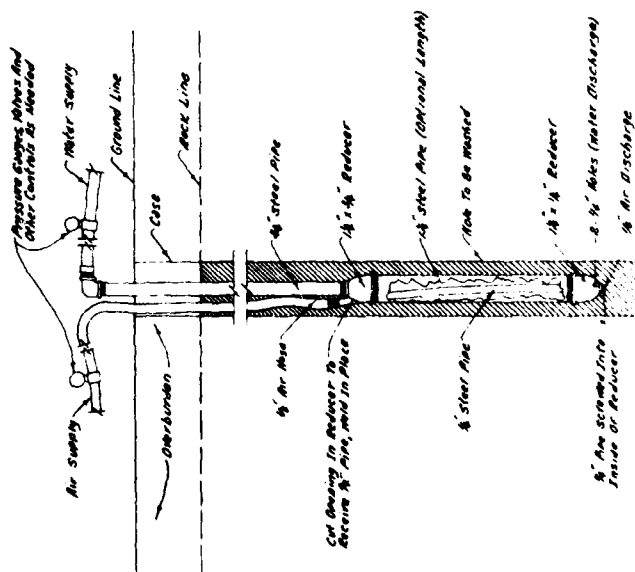
- Notes:
1. Foundation excavation will be completed prior to grouting.
 2. The engineer will determine the final location and depth of secondary and tertiary holes as needed.



TYPICAL GROUT HOLE PLACEMENT



TYPICAL ARRANGEMENT OF GROUTING EQUIPMENT












TYPICAL WASH PIPE

Not To Scale

DAM NO 15	
SWEETWATER CREEK WATERSHED-MOWADE CO. TENN	
TYPICAL WASHING & GROUTING EQUIPMENT	
U.S. DEPARTMENT OF AGRICULTURE	
SOIL CONSERVATION SERVICE	
PROJECT NO. 15	4 IN.
SUB. 15A	4 IN.
7	
TN 2034-15	

[illegible]

	Designates Change
	Vertical Orientation
	Draw Cavity or Cavity Filled or Partially Filled with Very Soft Residual Material
	Cavity Filled with Mud or Residual Clay
	Weathered, Fractured or Swollen Rock
	Unconsolidated Soil Overburden
	Thick (Note: Not to be used)
	High-Legged Only
	High-Legged & Sampled

60	Red Grand Gravel	Grand, used for roads
61	Black Grand Gravel	Grand, used for roads
62	Gray Grand Gravel	Grand, used for roads
63	Blue Grand Gravel	Grand, used for roads
64	Green Grand Gravel	Grand, used for roads
65	Yellow Grand Gravel	Grand, used for roads
66	Orange Grand Gravel	Grand, used for roads
67	Pink Grand Gravel	Grand, used for roads
68	White Grand Gravel	Grand, used for roads
69	Black Grand Gravel	Grand, used for roads
70	Red Grand Gravel	Grand, used for roads
71	Blue Grand Gravel	Grand, used for roads
72	Green Grand Gravel	Grand, used for roads
73	Yellow Grand Gravel	Grand, used for roads
74	Orange Grand Gravel	Grand, used for roads
75	Pink Grand Gravel	Grand, used for roads
76	White Grand Gravel	Grand, used for roads
77	Black Grand Gravel	Grand, used for roads
78	Red Grand Gravel	Grand, used for roads
79	Blue Grand Gravel	Grand, used for roads
80	Green Grand Gravel	Grand, used for roads
81	Yellow Grand Gravel	Grand, used for roads
82	Orange Grand Gravel	Grand, used for roads
83	Pink Grand Gravel	Grand, used for roads
84	White Grand Gravel	Grand, used for roads
85	Black Grand Gravel	Grand, used for roads
86	Red Grand Gravel	Grand, used for roads
87	Blue Grand Gravel	Grand, used for roads
88	Green Grand Gravel	Grand, used for roads
89	Yellow Grand Gravel	Grand, used for roads
90	Orange Grand Gravel	Grand, used for roads
91	Pink Grand Gravel	Grand, used for roads
92	White Grand Gravel	Grand, used for roads
93	Black Grand Gravel	Grand, used for roads
94	Red Grand Gravel	Grand, used for roads
95	Blue Grand Gravel	Grand, used for roads
96	Green Grand Gravel	Grand, used for roads
97	Yellow Grand Gravel	Grand, used for roads
98	Orange Grand Gravel	Grand, used for roads
99	Pink Grand Gravel	Grand, used for roads
100	White Grand Gravel	Grand, used for roads

Centerline of Oaks	7-1-68
Barron Ave.	7-1-68
Emergency Utility	7-1-68
Centerline of Portland Highway	7-1-68
Heavy Section Structure from E Dam	7-1-68
Utility Section Remains from E Dam	7-1-68
Dead River	7-1-68
Dred Line	7-1-68

1. ALL SOIL CLASSIFICATIONS ARE FIELD CLASSIFICATIONS.
2. UNITED SOIL CLASSIFICATION SYSTEM USED.
3. SOIL INVESTIGATION REPORT IS AVAILABLE FOR
REVIEW BY PROSPECTIVE BIDDERS AT THE OFFICE
RECEIVING THE BID INVITATION.

LEGEND.

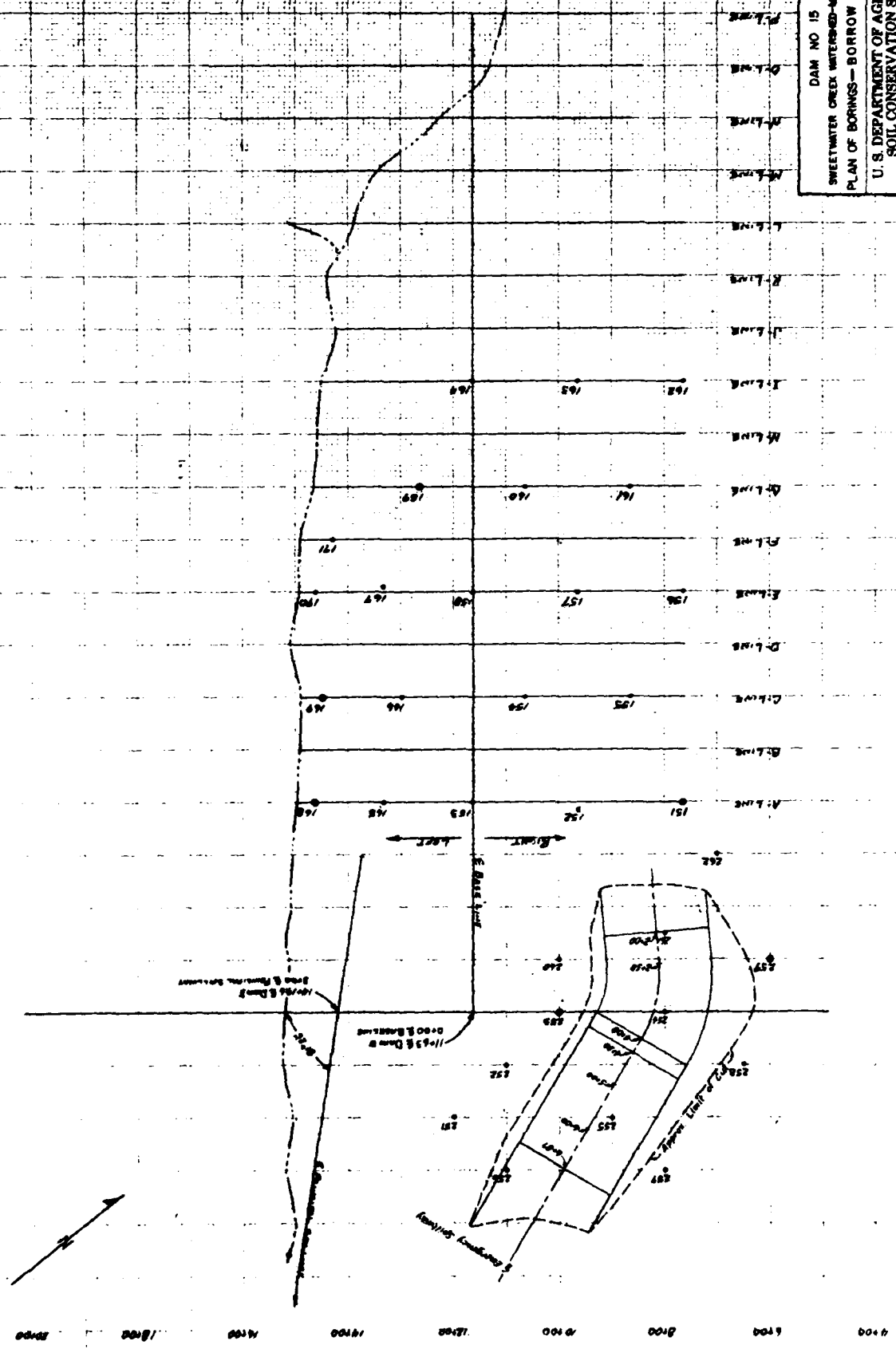
DAM NO 15
SWEETWATER CREEK WATERSHED-AUGORSE CO, TENN
LEGEND OF BORINGS

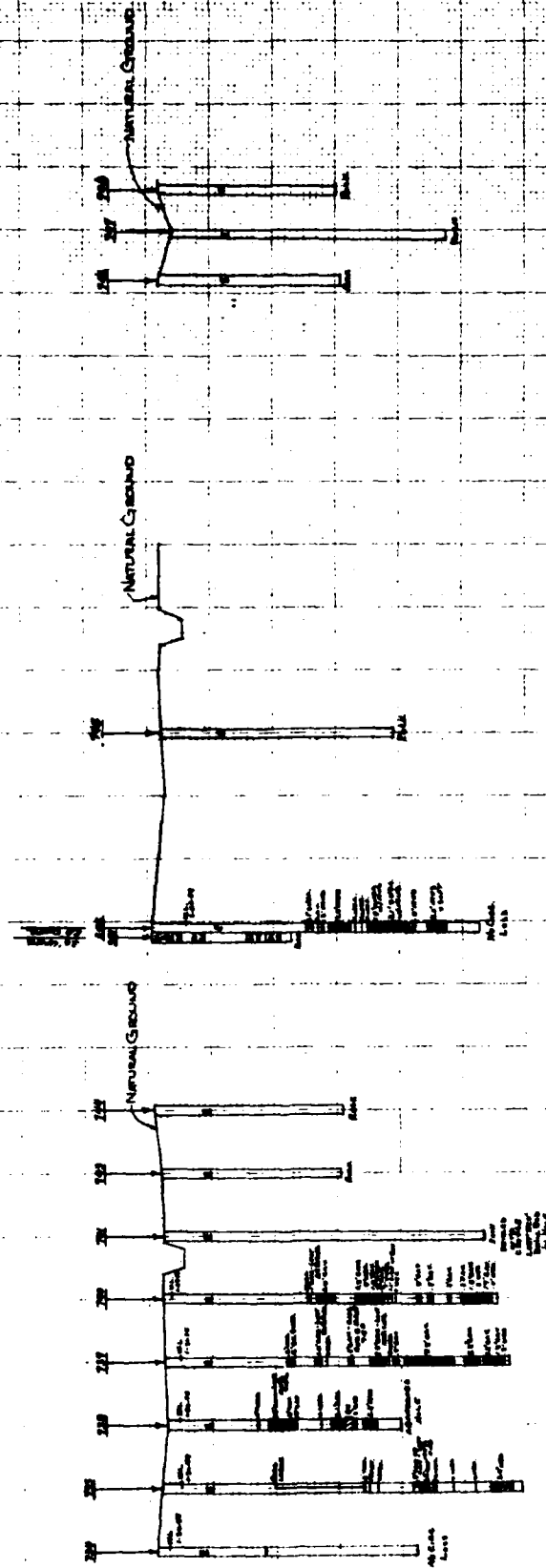
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Account	Debit	Credit	Balance
DRAYTON & SCOTT 4 M		10.75	10.75
CRANE R		5.36	16.11
			16.11

DAM NO 15	
SWEETWATER CREEK WATERED-MORRIS CO. TENN	
PLAN OF BORINGS - BORROW INVESTIGATION	
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	
Project CHARTREE & SCOTT	Sheet 4 of 4
Drawn GRANGER	Scale 1" = 100'
Check W. E. C.	5-74
	TN-2034-15

PLAN VIEW





DAM NO 15
 SWEETWATER CREEK WINTERED-MORRIS CO. TENN
 VALLEY SECTION-100, 80, 100 FEET UPSTREAM
 U. S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE
 PROJECT NO. 15
 DRAWN BY: J. E. DAVIS
 CHECKED BY: J. E. DAVIS
 DATE: 10-1-54
 SHEET NO. 15

VALLEY SECTION - 100 FEET UPSTREAM
 J. E. Davis

NOTE:
 FOR LEGEND OF SYMBOLS SEE
 SHEET NO. 14

180

170

160

150

140

130

120

110

100

90

12+00

12+50

13+00

13+50

14+00

14+50

15+00

15+50

16+00

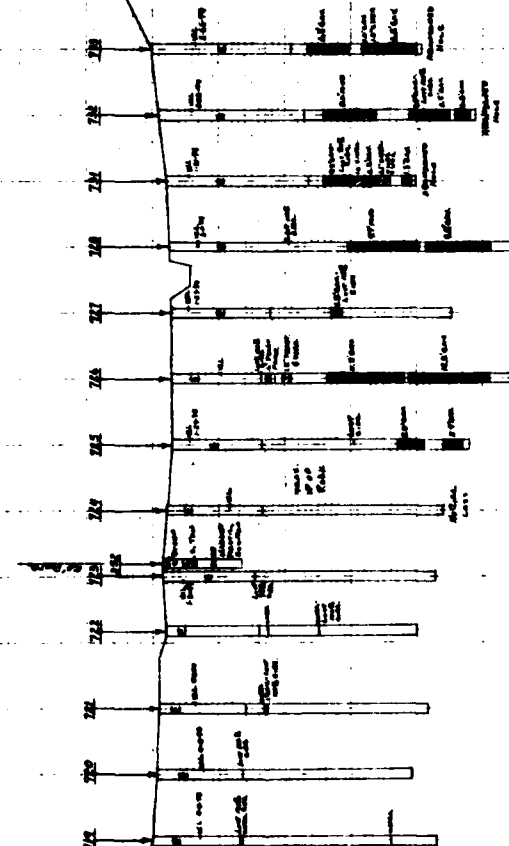
16+50

17+00

17+50

18+00

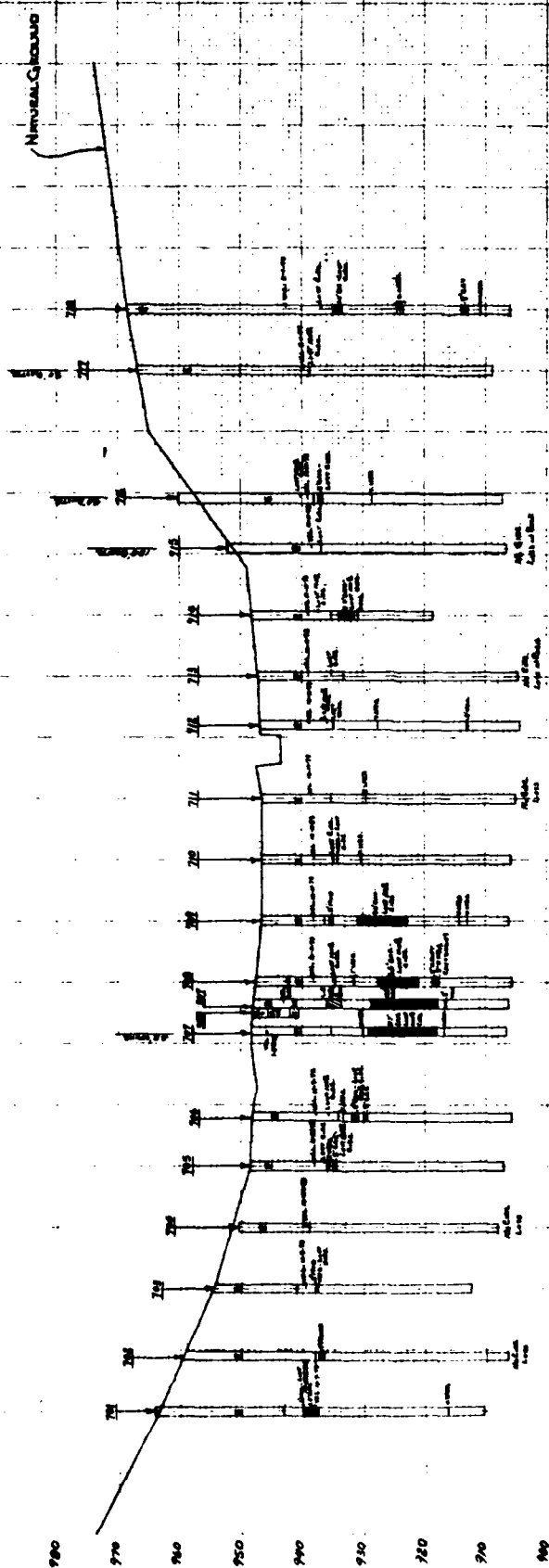
Nearby Creek



Valley Section - 100 Feet Upstream
Plan & Dam

NOTE:
FOR LEGEND OF BORINGS
SEE SHEET NO. 31

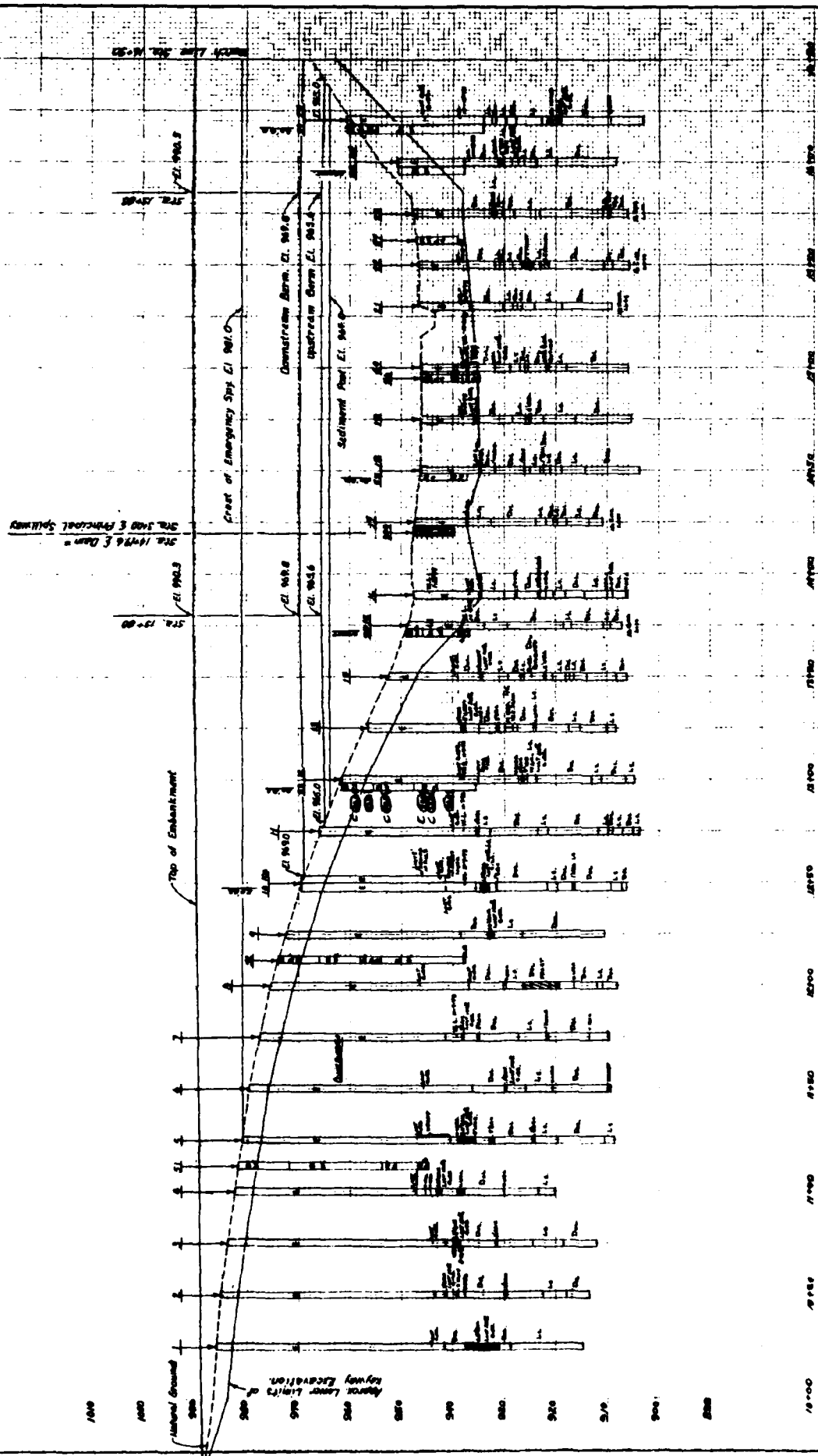
DAM NO 15	
SWEETWATER CREEK WATERSHED-MORGAN CO. TENN	
VALLEY SECTION - 100 FEET UPSTREAM	
U. S. DEPARTMENT OF AGRICULTURE	
SOIL CONSERVATION SERVICE	
Project: CRABTREE & SCOTT 4.75	Scale: 1" = 10'
Drawn: GRANGER	Check: W.E.C.
Date: 5-7-55	TN-2034-15



DAM NO. 15	
SWEETWATER CREEK WATERED-WORRICE CO. TENN.	
VALLEY SECTION - 50 FEET UPSTREAM	
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	
Drawn by CHARLES B. SCOTT & SONS	Checked by J. H. DAVIS
Date 5-2-55	Project No. TN-2084-15

NOTE:
FOR LEGEND OF SYMBOLS
SEE SHEET NO. 31

Valley Section - 50 feet Upstream
From S. Dam



DAM NO 15
SWEETWATER CREEK WATERSHED-MORRIS CO, TENN
PROFILE E DAM

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

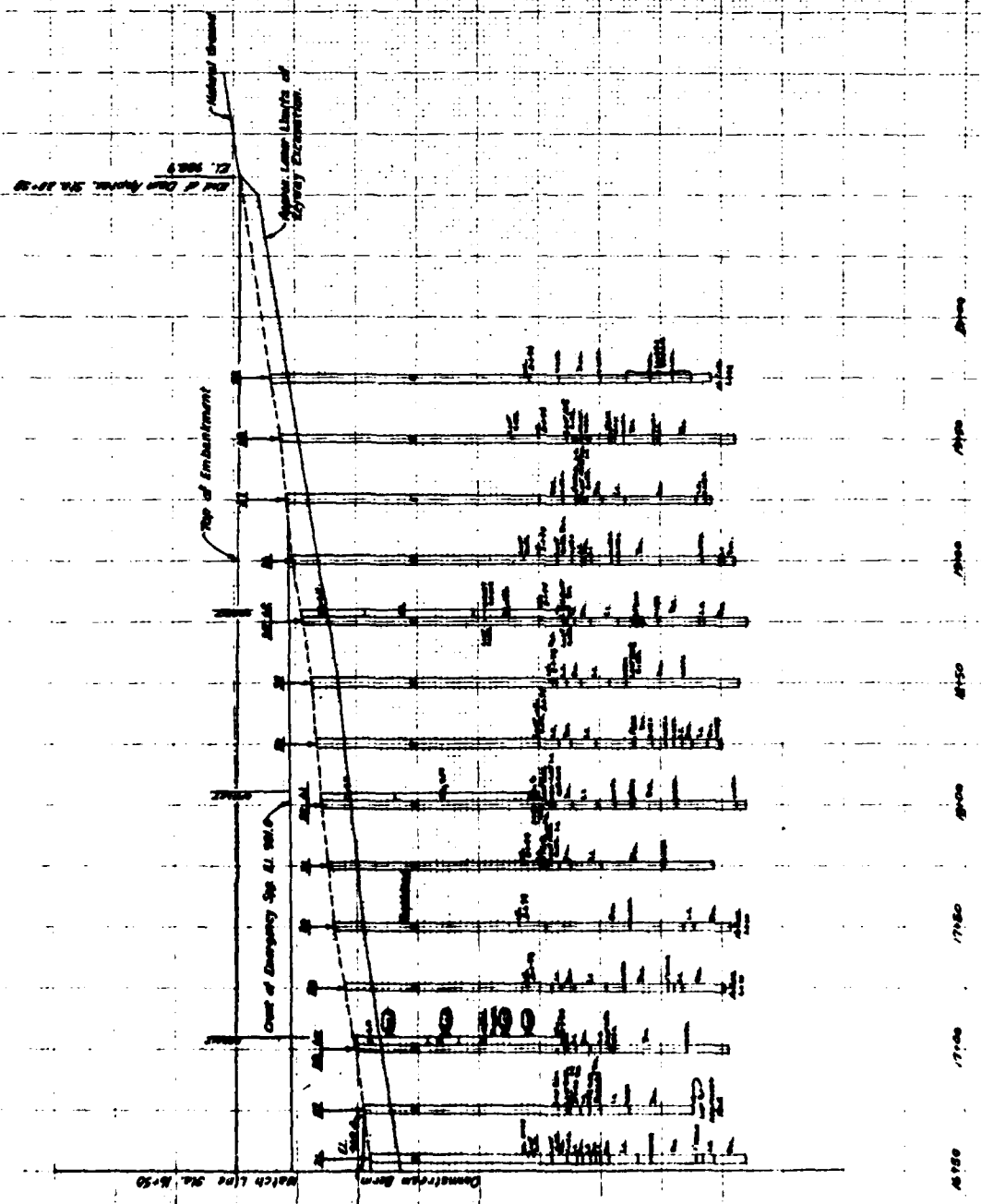
Designed by CRANTREE & SCOTT
Drawn by GRAHAM
Checked by W. E. C.
Scale: 1" = 20' HORIZONTALLY
1" = 20' VERTICALLY
Sheet No. 15
Project No. TN-2034-15

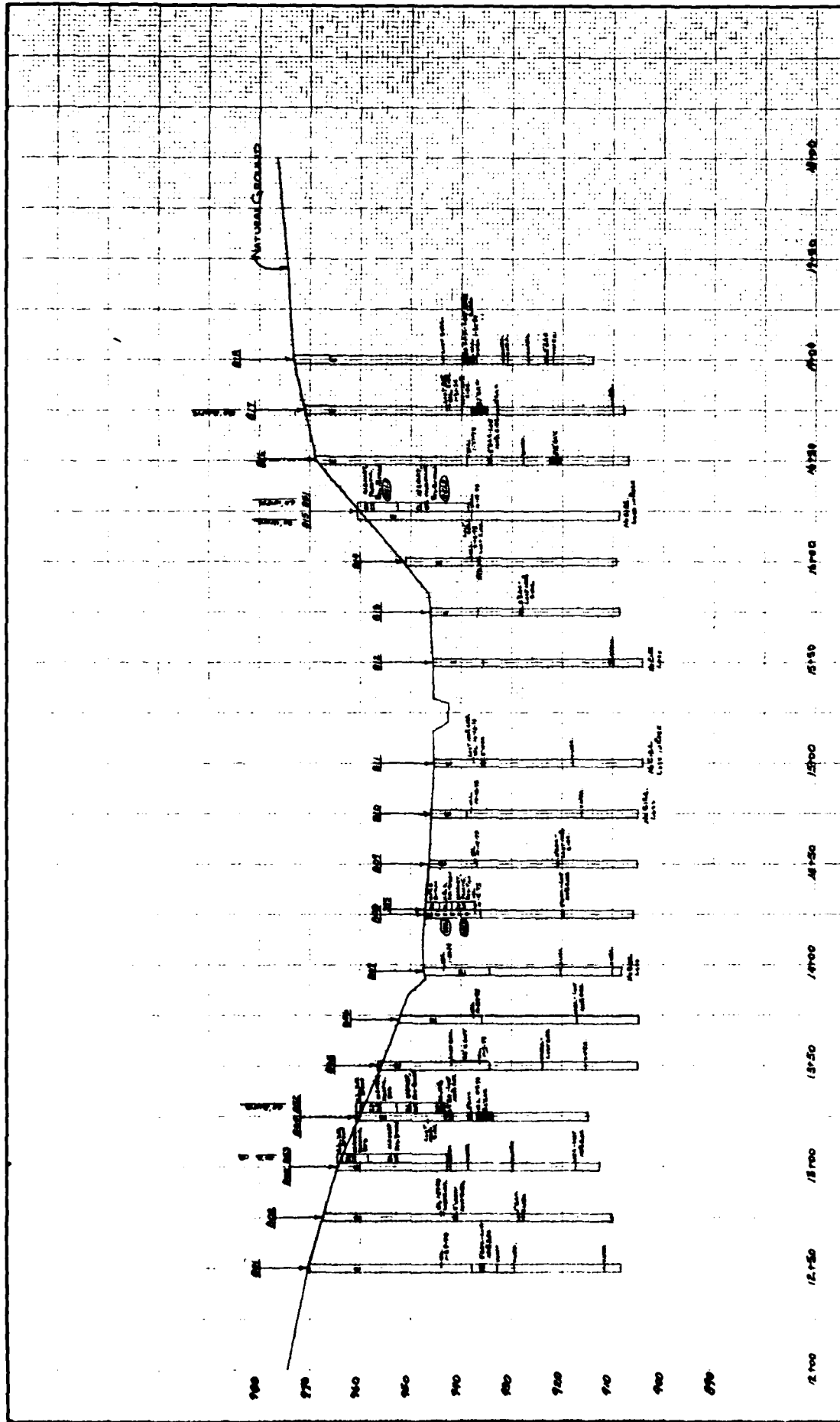
Note:
FOR LEGEND OF BORINGS SEE
SHEET NO 5)

DAM NO. 15	
SWELL WATER CREEK WATERSHED-HORRICE CO. TENN.	
PROFILE E DAM	
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	
Drawn by	Checked by
DAVID L. BOTT 4-76	W. C. 5-76
Printer	Scale
W. C.	5 ft. = 1 in.
TN-2034-15	

Note:
For Legend of Symbols See
Sheet No. 31.

E DAM PROFILE





DAM NO. 15

SWEETWATER CREEK WATERSHED-BOONE CO. TENN.

VALLEY SECTION - 50 FEET DOWNSTREAM

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

DESIGNED BY: CHARTREE & SCOTT 4/74

DRAWN BY: GRANGER 4/74

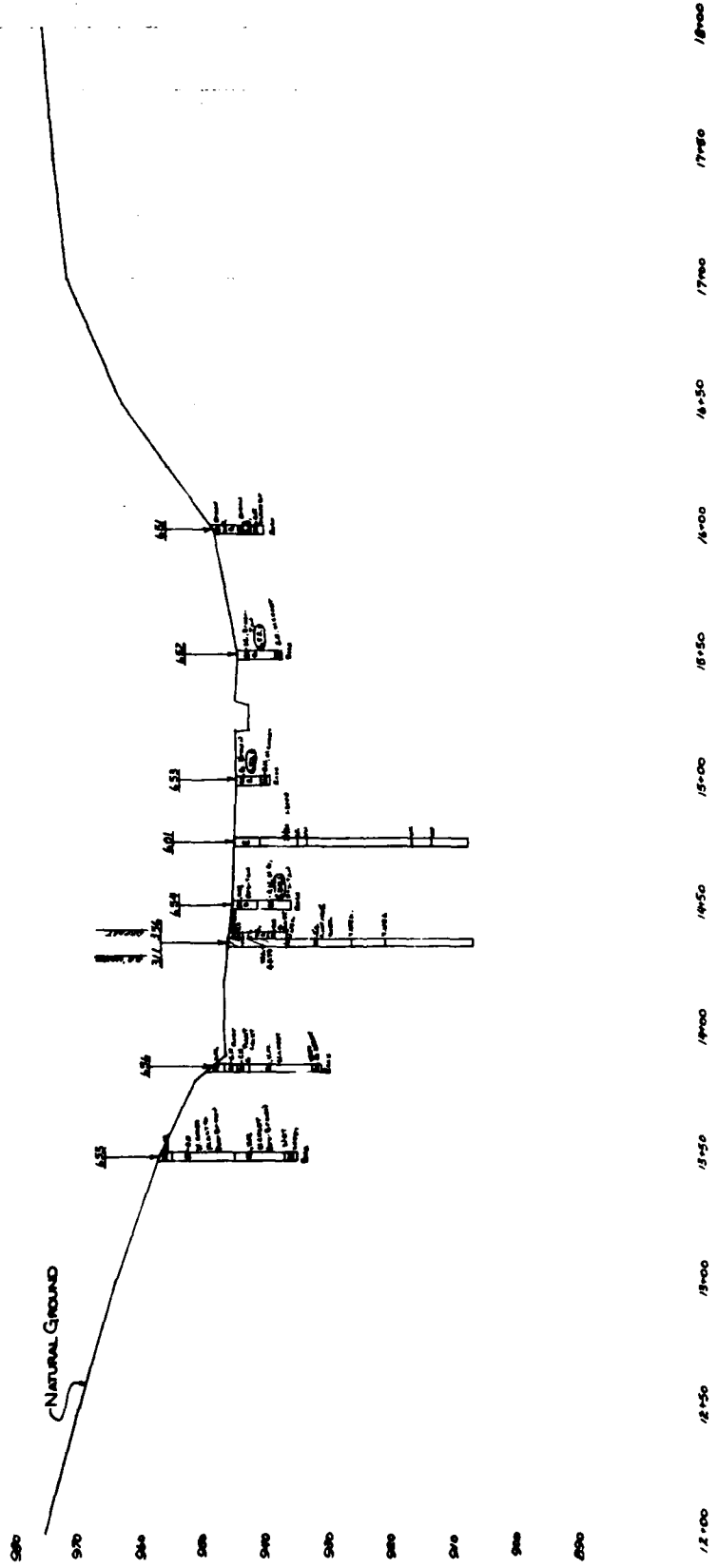
CHECKED BY: [Signature] 4/74

APPROVED BY: W.E.C. 3/6/55

TN-2034-15

Valley Section - 50 Feet Downstream
Elev. 870

NOTE:
FOR LEGEND OF BORINGS SEE
SHEET NO. 31



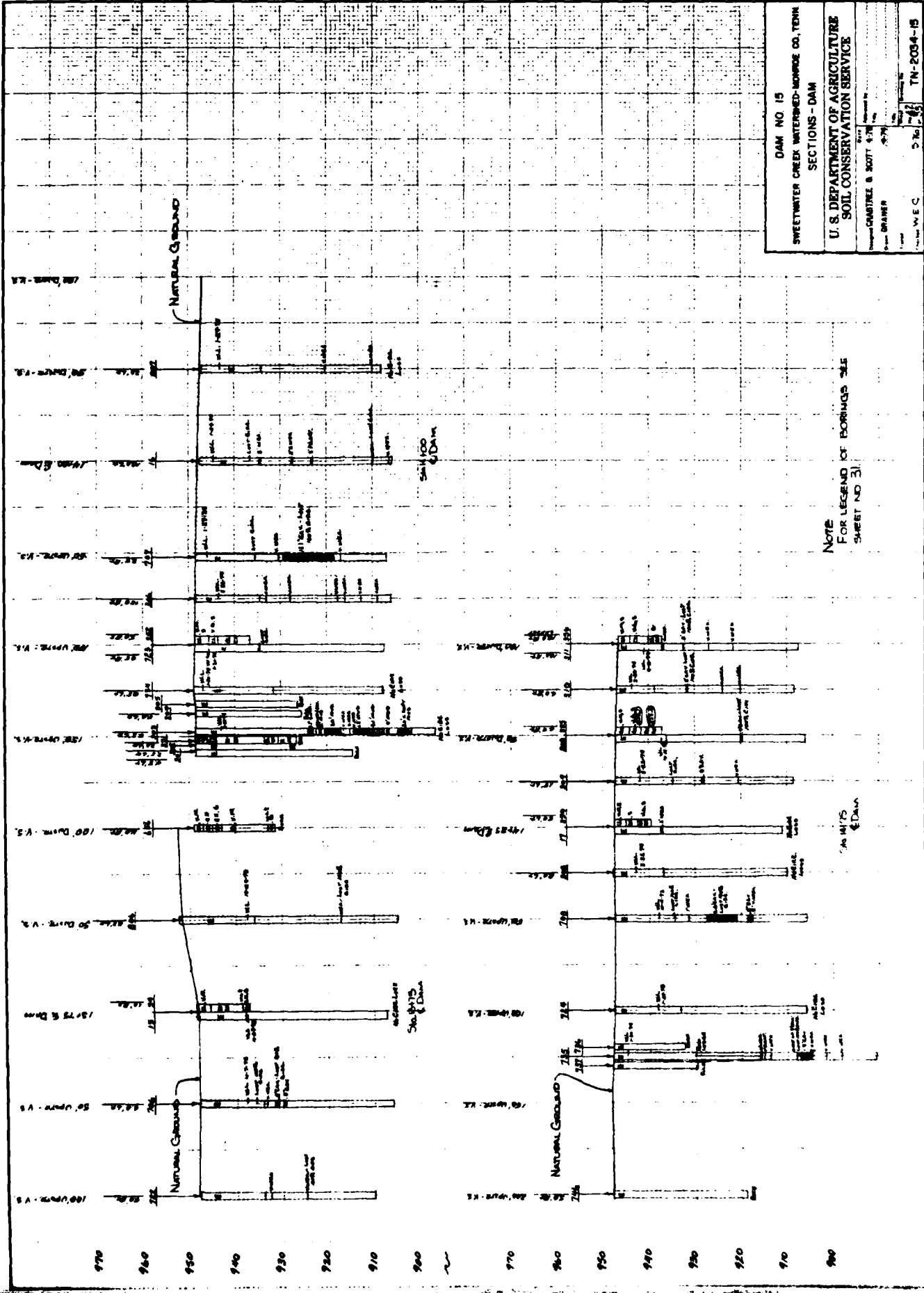
DAM NO 15	
SWEETWATER CREEK WATERSHED-MORGAN CO, TENN	
VALLEY SECTION - 100 FEET DOWNSTREAM	
U. S. DEPARTMENT OF AGRICULTURE	
SOIL CONSERVATION SERVICE	
DESIGNED BY	CHARLES E. SCOTT
CHECKED BY	GRANGER
DATE	4-19-55
SCALE	5% 1"=40'
PROJECT NO.	TN-2034-15

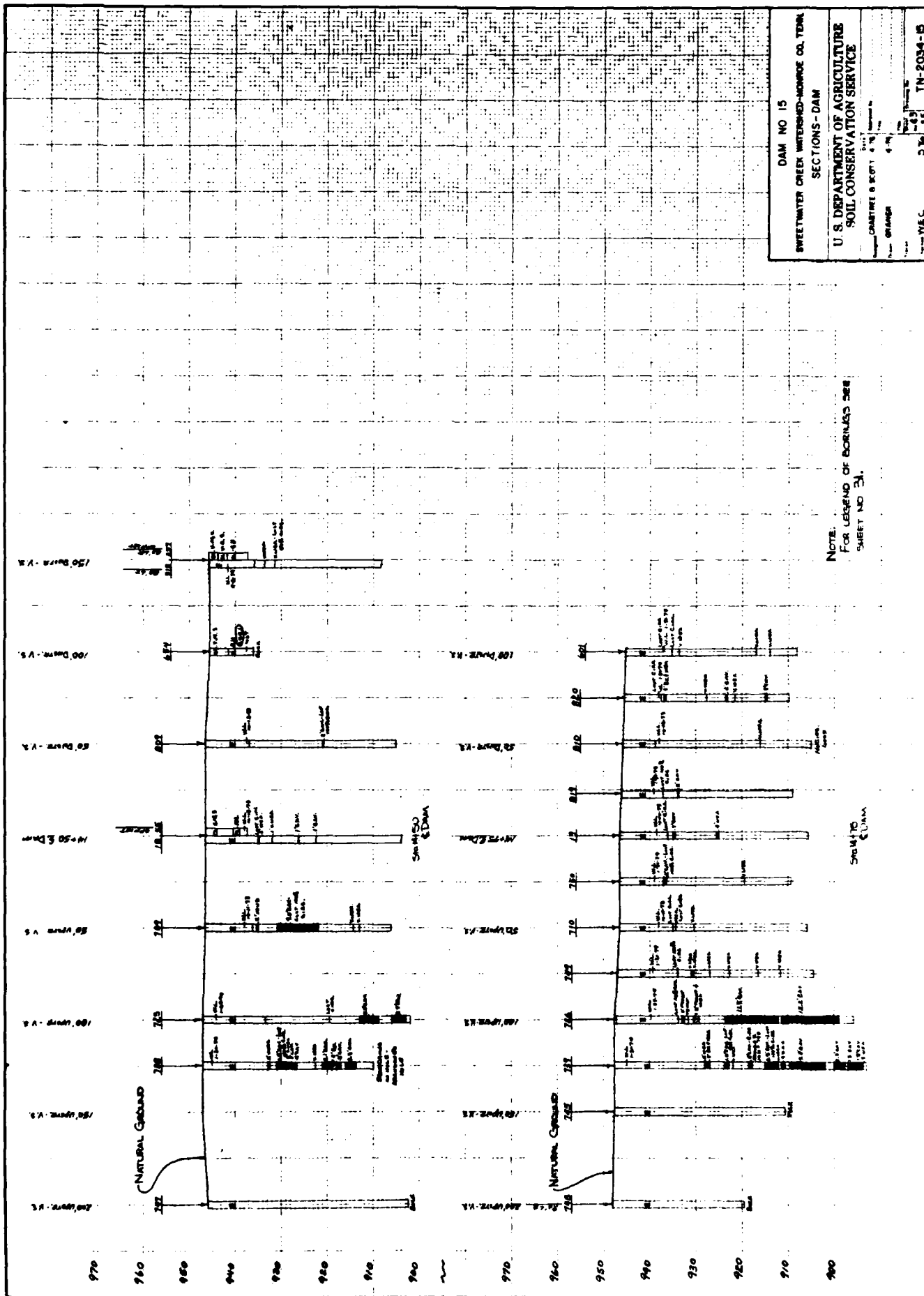
NOTE:
FOR LEGEND OF BORINGS
SEE SHEET NO 31.

Valley Section - 100 Feet Downstream
From 2 Dam

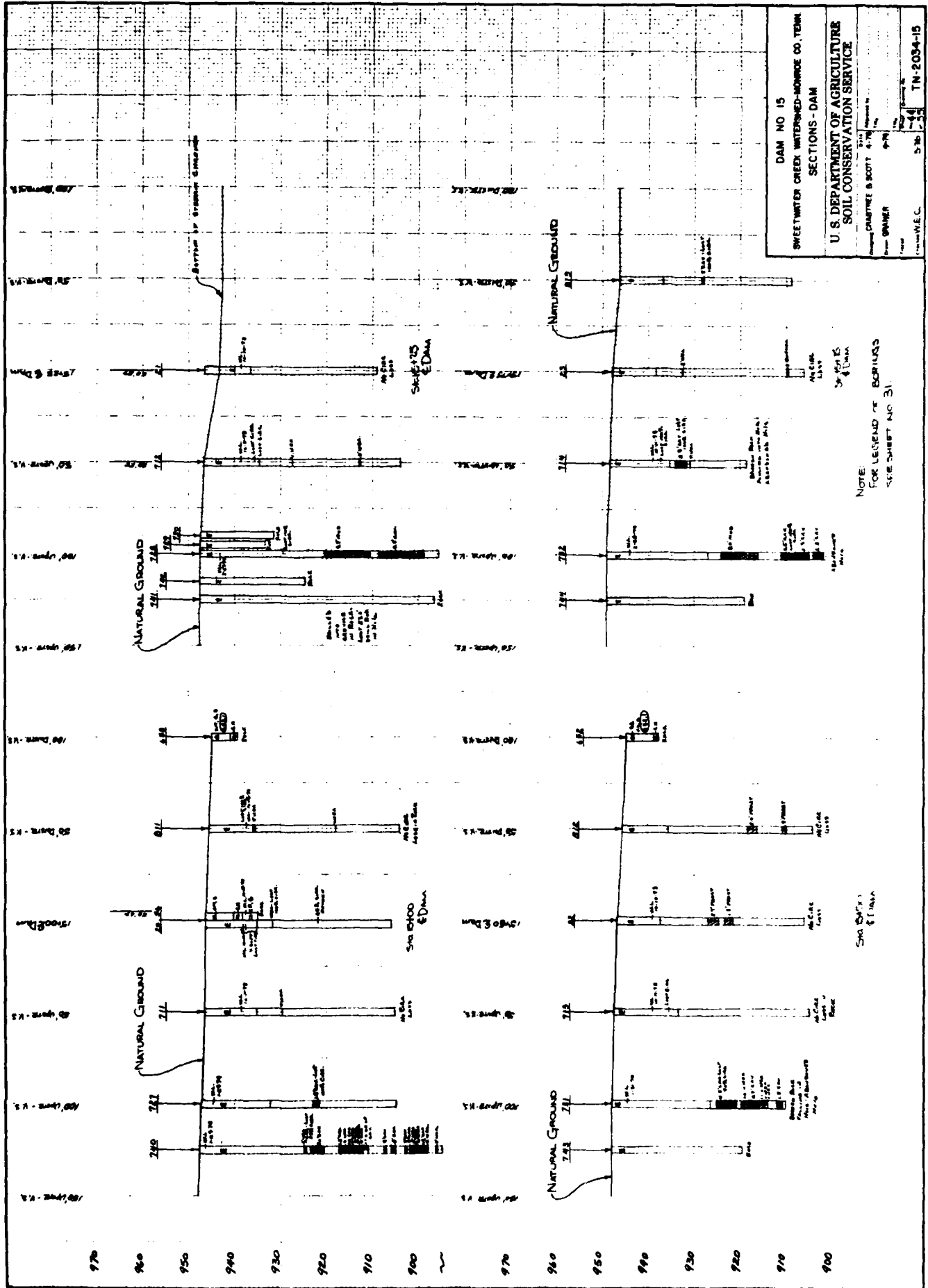
DAM NO 15	
SWEETWATER CREEK WATERSHED-MORRIS CO, TENN	
SECTIONS - DAM	
U. S. DEPARTMENT OF AGRICULTURE	
SOIL CONSERVATION SERVICE	
Prepared by	CASTLE & SOTT 4-74
Checked by	DRAPER
Scale	1" = 100'
Sheet No.	45
Project No.	TN-2034-15

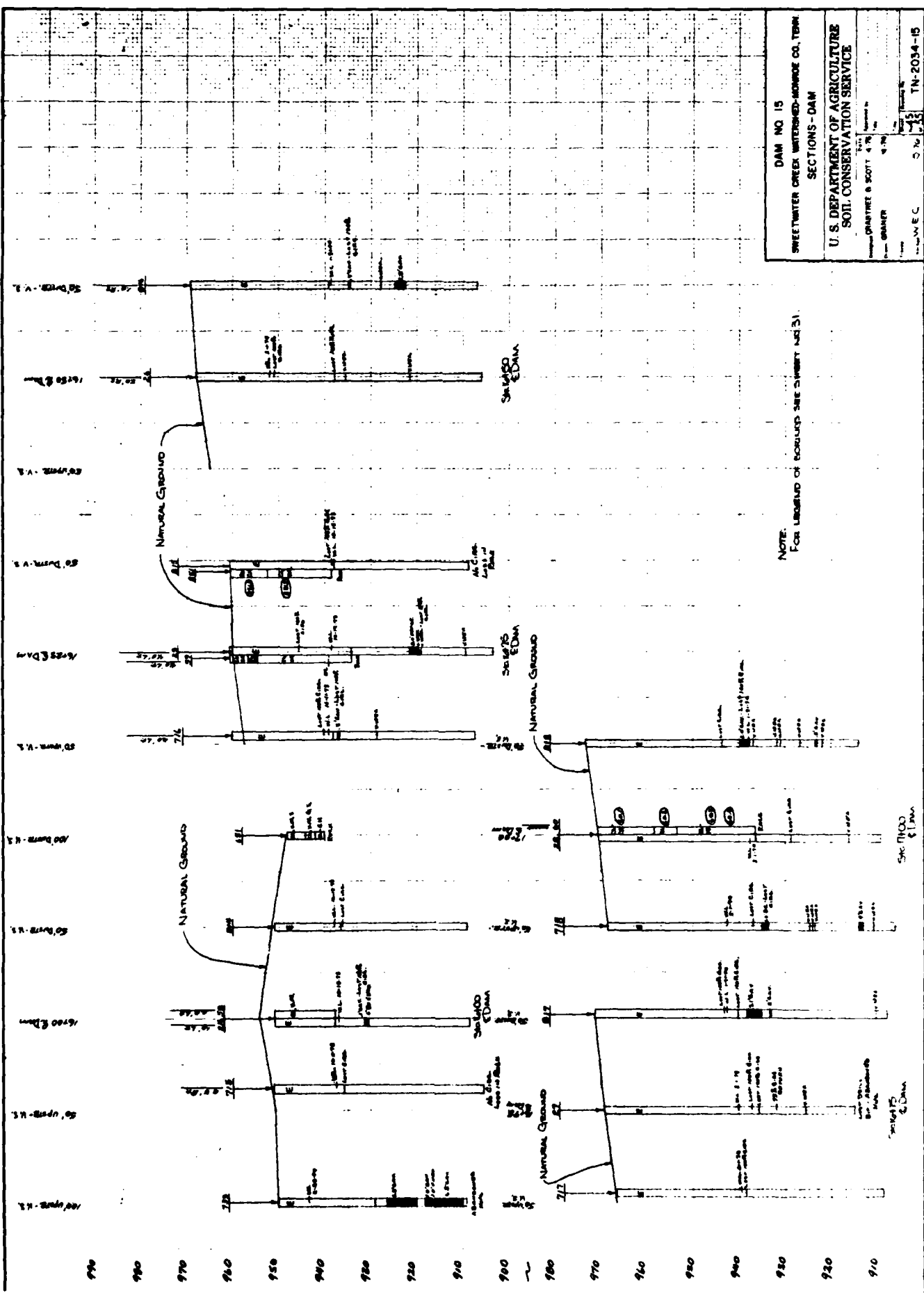
NOTE
FOR LEGEND OF BORINGS SEE
SHEET NO 31





DAM NO 15	
SWEETWATER CREEK WATERSHED-MORRIS CO. TENN.	
SECTIONS - DAM	
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	
DATE: 4-15-43	BY: W.E.C.
PROJECT: 4-15-43	NO. 15
TN-2034-15	





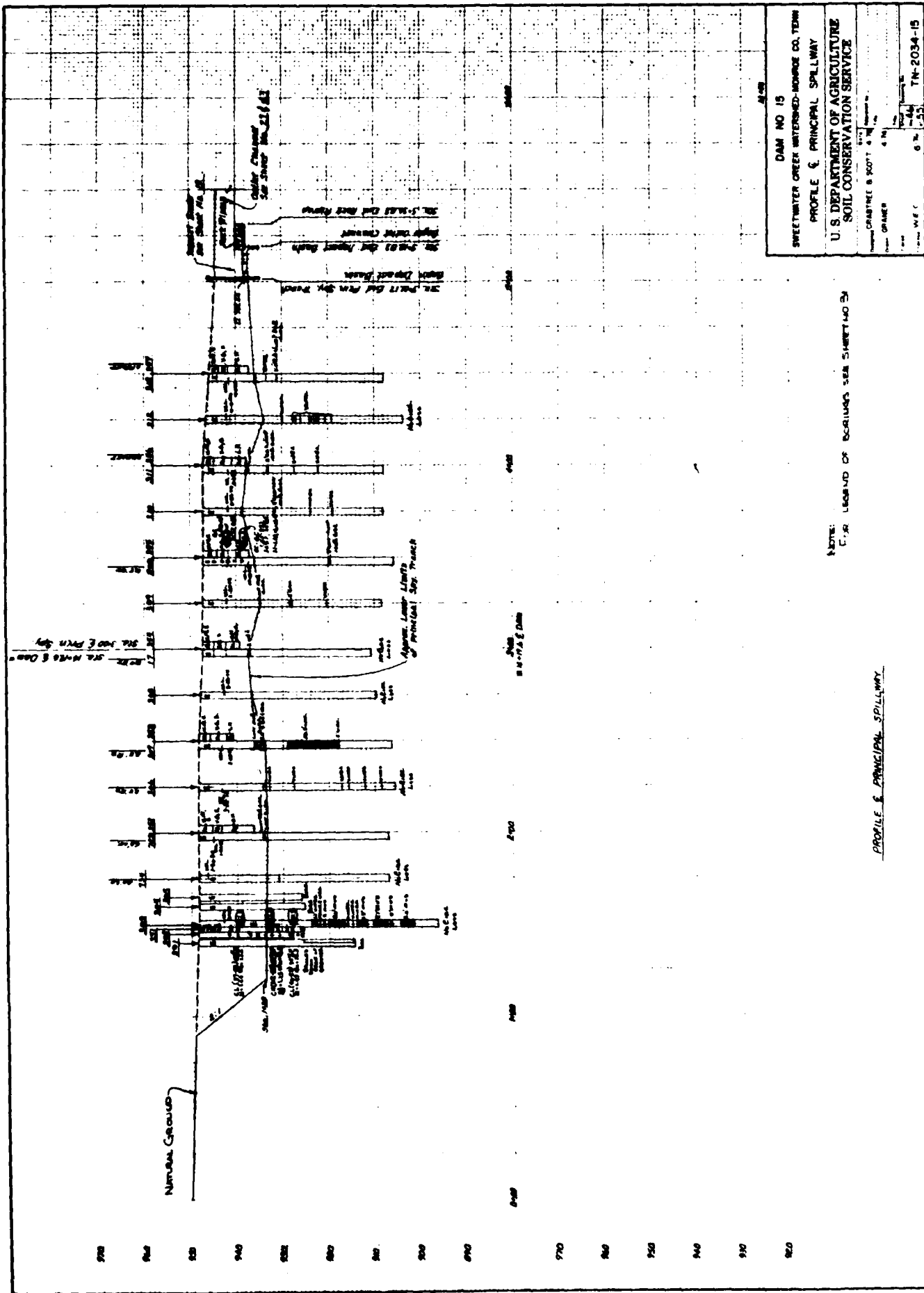
DAM NO 15
SWEETWATER CREEK WATERSHED-MORRIS CO. TENN
SECTIONS-DAM

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

DESIGNED BY: CHARTER & SCOTT 4/7/55
 DRAWN BY: CHARTER 4/7/55
 CHECKED BY: JUNE C. 5/2/55
 T-2034-15

NOTE:
 FOR LEGEND OF SYMBOLS SEE SHEET 15/31

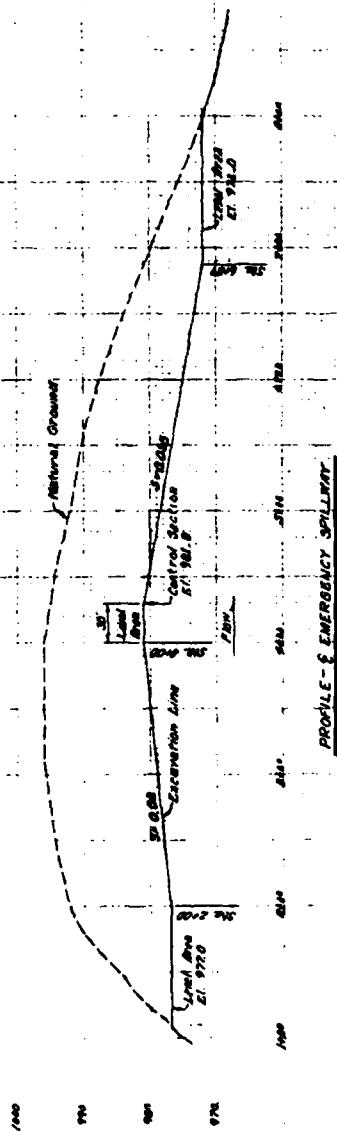
Scale 1/1000
 1" = 100'



NOTE:
C.R. LEGEND OF BORINGS SEE SHEET 102 BY

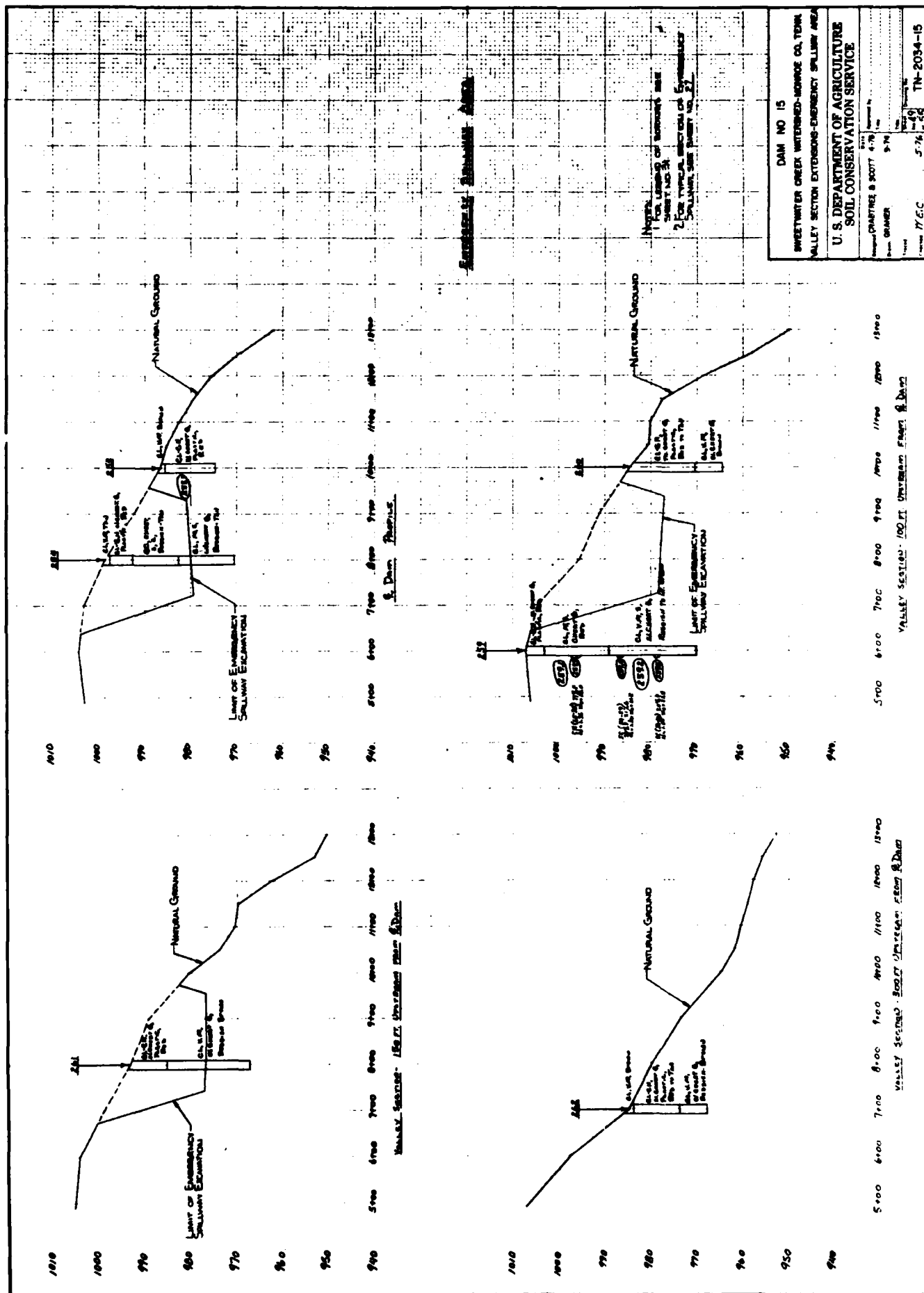
PROFILE & PRINCIPAL SPILLWAY

DAM NO 15	
SWEETWATER CREEK IMPROVED-MONROE CO. TENN	
PROFILE & PRINCIPAL SPILLWAY	
U. S. DEPARTMENT OF AGRICULTURE	
SOIL CONSERVATION SERVICE	
DESIGNED BY:	CHARLES E. SCOTT
CHECKED BY:	J. H. WELCH
DATE:	10-23-33
PROJECT:	15-2034-15

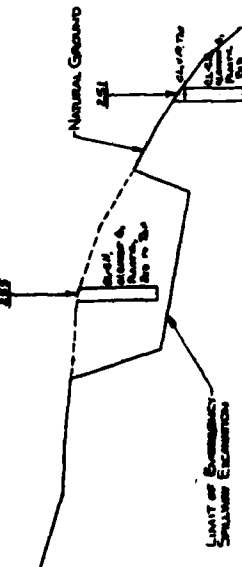


PROFILE - E EMERGENCY SPILLWAY

DAM NO 15	
SWEETWATER CREEK WATERSHED-SOURCE CO. TENN.	
PROFILE & EMERGENCY SPILLWAY	
U. S. DEPARTMENT OF AGRICULTURE	
SOIL CONSERVATION SERVICE	
Project: CHARTREE & BOTT	Sheet: 1 of 1
Drawn: BLANKS	Scale: 1" = 100'
Checked: H. F. C.	Project: TN-2034-15



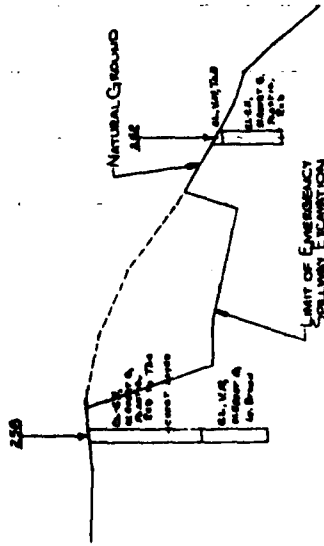
1010



5+00 6+00 7+00 8+00 9+00 10+00 11+00 12+00

Valley Section - 100 ft Dam Section from 8 Dam

1010



5+00 6+00 7+00 8+00 9+00 10+00 11+00 12+00

Valley Section - 100 ft Dam Section from 8 Dam

Emergency Spillway Area

- 1. Filled up as shown on sheet No. 3A
- 2. For typical section of Emergency Spillway see sheet No. 3A

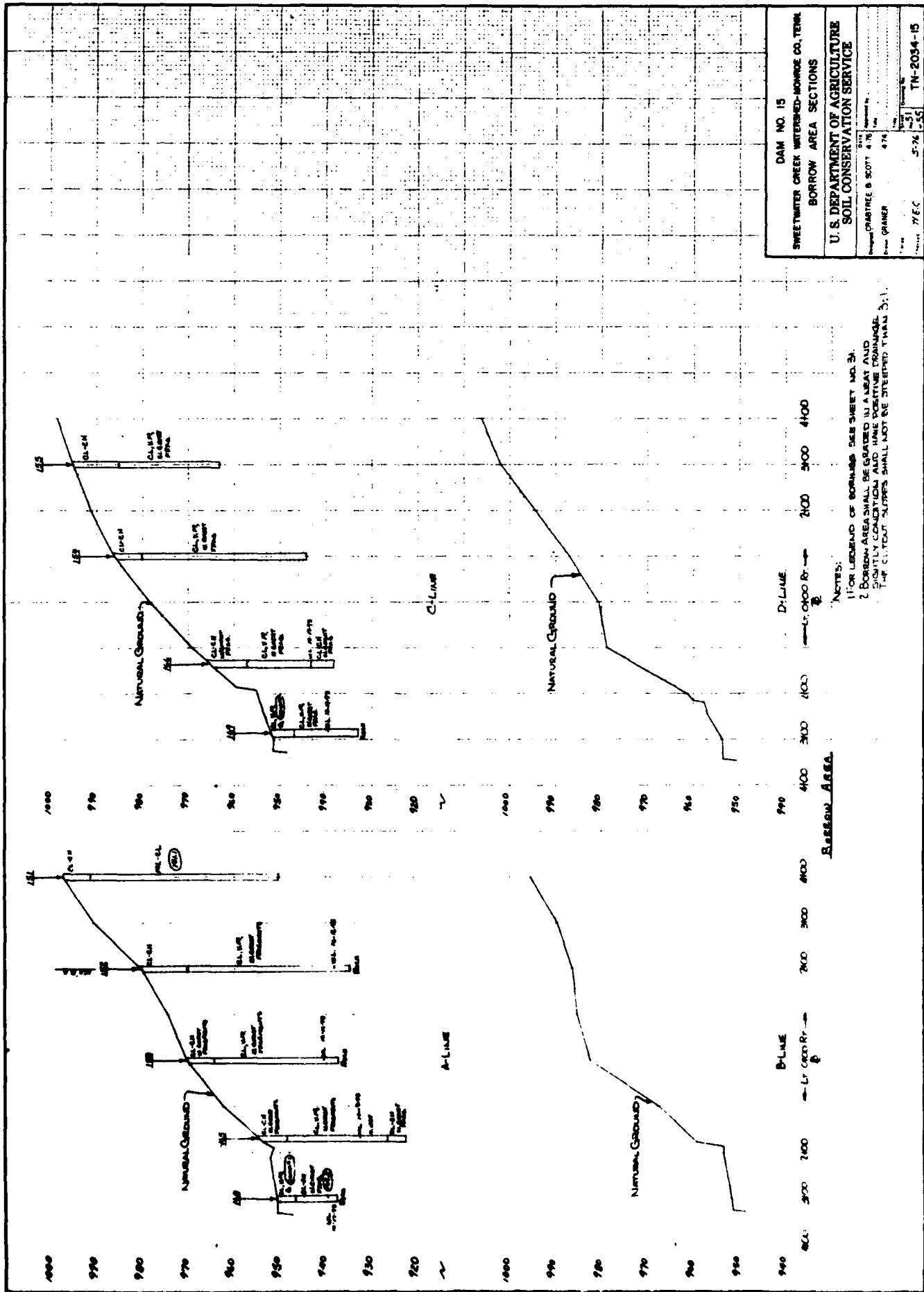
DAM NO 15

SWEETWATER CREEK INTERLOCKED-MOORE CO. TERN
VALLEY SECTION EXTENDING-EMERGENCY SPILLWAY AREA

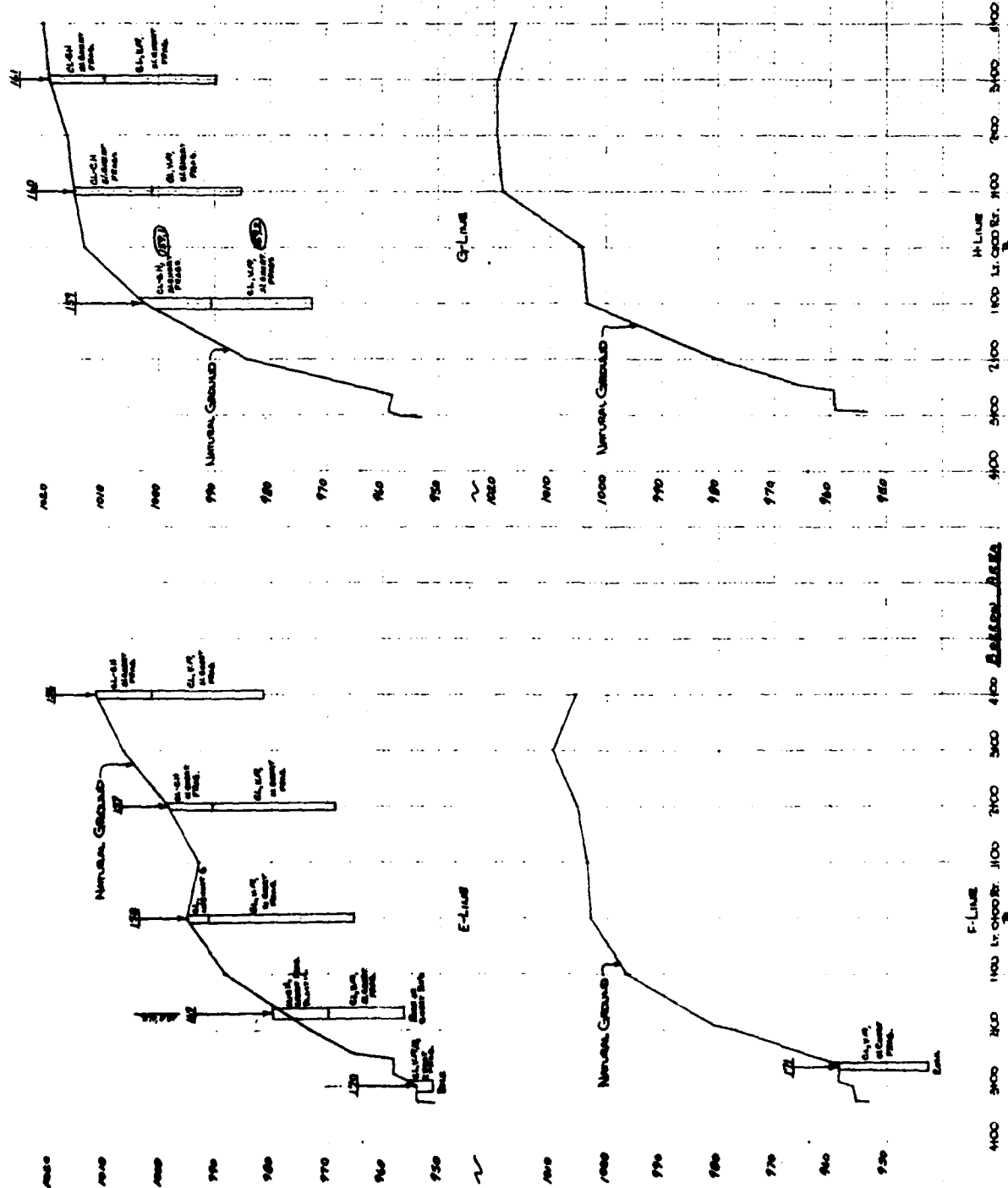
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Project No.	Sheet No.	Scale	Date
15-15	15-15	1" = 100'	1940
Drawn by	Checked by	Approved by	
WEC			

TH-2034-15

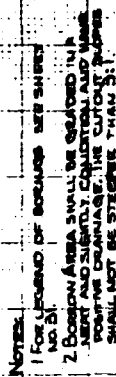


DAM NO. 15	
SWEETWATER CREEK WATERED-WORRE CO. TENN.	
BORROW AREA SECTIONS	
U. S. DEPARTMENT OF AGRICULTURE	
SOIL CONSERVATION SERVICE	
Engineer: CHARLES B. SCOTT	Scale: 4" = 100'
Drawn: GRANGER	Sheet: 474
Checked: J. E. C.	Project: 5-76
TN-2034-15	



DAM NO. 15	
SWEETWATER CREEK WATERSHED-SOURCE CO. TERR.	
BORROW AREA SECTIONS	
U. S. DEPARTMENT OF AGRICULTURE	
SOIL CONSERVATION SERVICE	
Project	CHARTER & SPILL 4-14
Drawn	CHARTER
Check	W.E.C.
Date	5-24-55
Sheet	15
Project	TN-2084-15

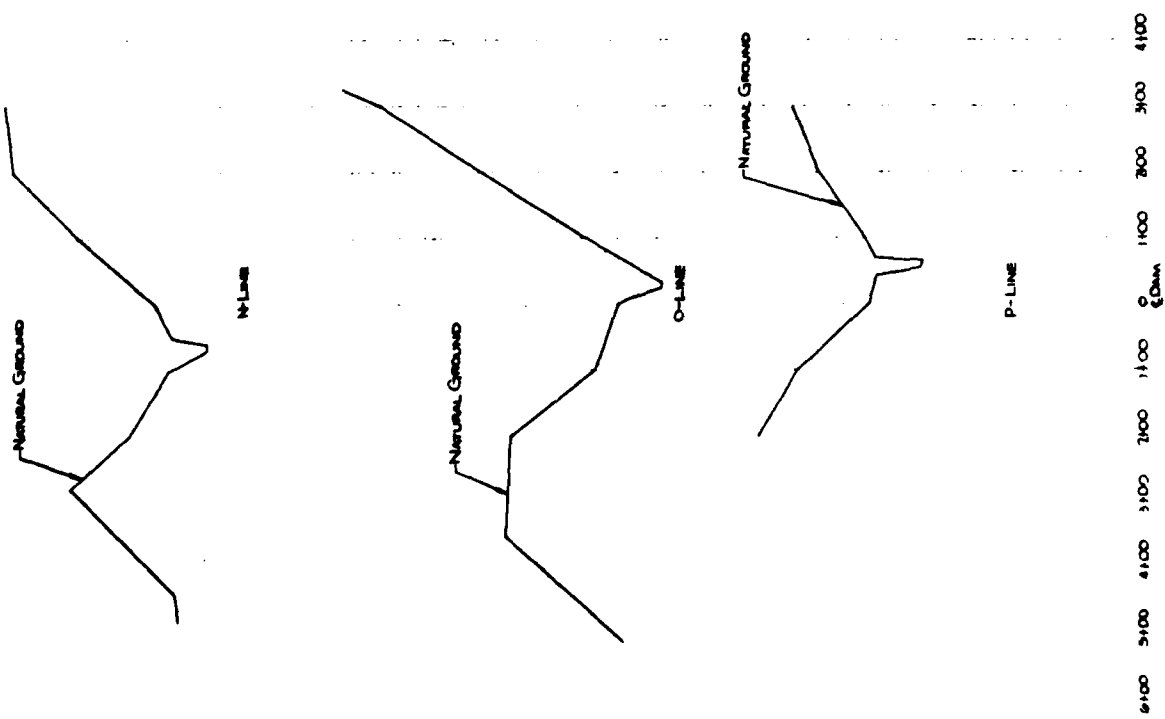
Notes:
 1. For use of sections see sheet no. 31.
 2. Borrow areas shall be located in a wet and dry condition and shall not be steeper than 3:1.
 3. The current slopes shall not be steeper than 3:1.



DAM NO. 15
SWEETWATER CREEK WATERBED-MORRIS CO., TEXAS
BORROW AREA SECTIONS

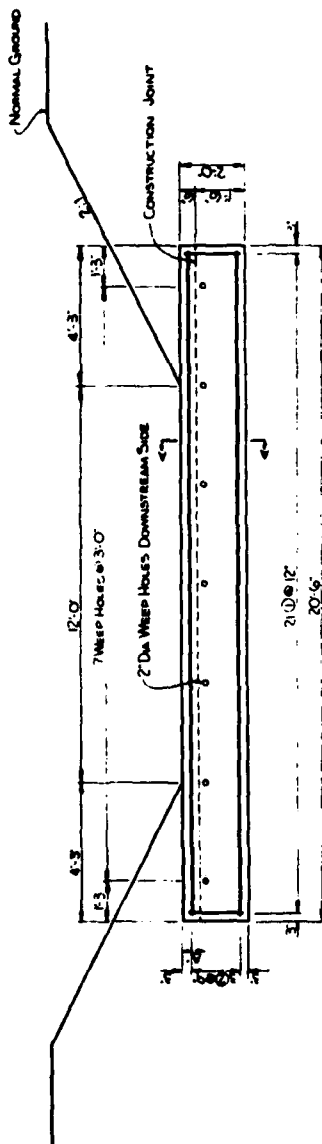
**U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE**

[illegible]



NOTE:
BORROW AREA SHALL BE GRADED IN A
HEART AND MOUNTAIN QUANTITY AND HAVE
MINIMUM OF 10% GRADE. THE GRADE SHALL
NOT BE STEEPER THAN 3:1.

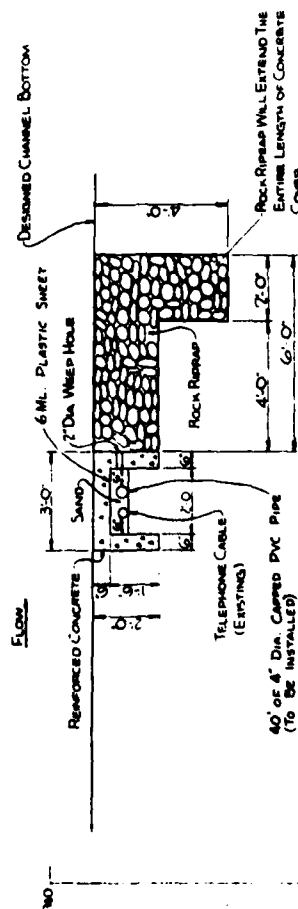
DAM NO 15	
SWEETWATER CREEK WATERSHED-MONROE CO. TENN.	
BORROW AREA SECTIONS	
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	
Project: CHARTER 5 3077	Sheet: 4-15
Drawn: FREEMAN	Scale: 4" = 100'
Checked: W.E.C.	Date: 5-16-55
TN-2094-B	



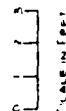
ELEVATION



PROFILE ALONG & CHANNEL



- NOTES
1. 4" PVC PIPE WILL BE FURNISHED BY SOUTH CENTRAL BELL TELEPHONE CO. AND INSTALLED BY THE CONTRACTOR PRIOR TO PLACING CONCRETE COVER.
 2. BACKFILL AROUND AND OVER THE CABLE AND PVC PIPE WILL BE NATURAL SAND, WITH A 1/2" MAXIMUM SIZE.

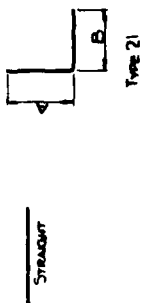


Steel Schedule	Item	Length	Type	A	B	Total
1	4	42	21	111	14	125
2	4	6	20-0	57		160-0

* THIS BAR WILL BE PURCHASED AS A STRAIGHT BAR, THEN FIELD BENT AS TYPE 21 WHEN STEEL IS PLACED FOR TOP SLAB

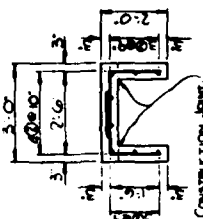
QUANTITIES

REINFORCING STEEL: 4 Bars: 305.5 Lin Ft 202 T50 Lbs
 VOLUME OF CONCRETE: 7.21 cu yds
 VOLUME OF RIPRAP: 12 cu yds
 VOLUME OF SAND: 10.76 cu yds



MIN RADIUS OF BENDS = 3 BAR DIA

Base Types



SECTION A-A

DAM NO 15	
SWEETWATER CREEK WATERED-SOURCE CO. TOWN	
DETAILS-TELEPHONE CABLE PROTECTION	
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	
DESIGNED BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE
PROJECT NO.	574
PROJECT NAME	W. C. C.
PROJECT LOCATION	TN-2034-15

APPENDIX F
CORRESPONDENCE

NON-FEDERAL DAM INSPECTION REVIEW BOARD
PO BOX 1070
NASHVILLE, TENNESSEE 37202

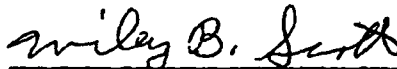
ORNED-G

Commander, Nashville District
US Army, Corps of Engineers
PO Box 1070
Nashville, TN 37202

1. The Interagency Review Board, appointed by the Commander on 19 June 1981, presents the following recommendations after meeting on 3 September 1981, to consider the Phase I investigation report on Sweetwater Creek Watershed Dam No. 15 inspected by the Tennessee Department of Conservation.
2. The Board is in agreement with other report conclusions and recommendations following minor revisions.



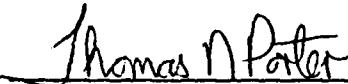
FRANK B. COUCH JR.
Chief, Geotechnical Branch
Chairman



WILEY B. SCOTT
Assistant Design Engineer
Alternate, Soil Conservation Service



EDMOND B. O'NEILL
Alternate, Division of Water
Resources
State of Tennessee



THOMAS N. PORTER
Hydraulic Engineer
Alternate, Hydrology and Hydraulics
Branch



EDWARD B. BOYD
Hydrologic Technician
Alternate, US Geological Survey



L. E. LOCKETT
Structural Engineer
Alternate, Design Branch